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ABSTRACT

A study examined the effects of the Targeted Jobs Tax Credit (TJTC) program on the employment and earnings of disadvantaged persons. Three outcomes--average quarterly wages, average number of quarters employed, and average wages during employed quarters--were studied for various categories of disadvantaged persons (economically disadvantaged youth, ex-offenders, and Vietnam-era veterans; handicapped persons who had completed rehabilitation; general assistance recipients; and Social Security Disability Insurance recipients). TJTC vouchering and certification were examined separately. More TJTC-vouchered and -certified individuals became employed, but their wages were relatively lower than in the comparison group. Of the targeted groups analyzed, only the handicapped group had consistently positive impacts for both vouchering and certification. Certified individuals tended to have more turnover than did their noncertified counterparts. The econometric technique used to correct for selectivity in the vouchering study suggests that white males who are vouchered tend to be the least employable whereas "creaming" is evident for white females and nonwhites. (An appendix documents the files used and processing steps taken to produce the final analysis files for the TJTC evaluation.) (MN)

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THE EFFECTS OF TJTC ON DISADVANTAGED POPULATIONS

Task 2 Final Report

by

Kevin Hollenbeck, Richard Willke, and
Jamal Ershadi

Revised August 1986

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I. EVALUATION STRATEGY AND BACKGROUND

I. EVALUATION STRATEGY AND BACKGROUND

Because disadvantaged workers have difficulty getting and keeping good jobs and often, as a result, require direct income maintenance support, the government subsidized the hiring of such workers by the private sector through the Targeted Jobs Tax Credit (TJTC) program. The objective of the present study is to estimate the effects of TJTC upon the employment and earnings of members of various target groups. To understand how and why TJTC might influence the earnings and employment rates of individuals, it is necessary to review the legislative and administrative background of the program.

1. LEGISLATIVE AND ADMINISTRATIVE BACKGROUND OF TJTC

The original TJTC program, authorized by the Revenue Act of 1978, subsidized the costs of hiring workers from certain target population groups:

- Economically disadvantaged youth ages 18-24
- Youth ages 16-18 participating in a cooperative education program
- Economically disadvantaged Vietnam-era veterans, under age 35
- Economically disadvantaged ex-offenders
- Handicapped persons receiving or having completed vocational rehabilitation
- General assistance recipients
- SSI recipients

The Act permitted employers who hired individuals in the target groups to claim a tax credit of 50 percent of the first year wages up to $6,000 per employee and 25 percent of second year wages up to $6,000.

A criticism of the original program was that it gave employers a subsidy for workers they would have hired in any case. This criticism stemmed from the facts that (1) half of the certifications were for cooperative education program participants, whom employers probably would have hired in the absence of the program, and (2) a large share of the remaining certifications were obtained retroactively, that is, after the hire occurred.

Countering this criticism, the Economic Recovery Tax Act of 1981 eliminated both the general eligibility for cooperative education program participants (economically disadvantaged students remained eligible) and retroactive certification. Furthermore, this Act added two new target groups--AFDC recipients/WIN participants and Involuntarily Terminated CETA/PSE Employees--and abolished the WIN program as a separate program. The Act also extended the program to December 31, 1982.

The Tax Equity and Fiscal Responsibility Act (TEFRA) of October 1982 established a new target group for the program--"Economically Disadvantaged Summer Youth"--and extended the program until December 31, 1984. Under the Act, an employer hiring a TJTC vouchered summer youth is eligible for a tax credit of 85 percent of the first $3,000 (or less) of the employee's qualified wages for any 90-day period (or less) between May 1 and September 15.

The Deficit Reduction Act of 1984 eliminated the involuntarily terminated CETA/PSE employees as a target group and extended the program until December 31, 1985. It further gave employers a grace period of 5 days after the start date for requesting a certification, *if* the worker had been vouchered prior to the start date.

Turning to the administrative procedures, it should be noted that the eligibility determination process for an individual is conducted by employment service offices or other vouchering agencies through completion of an Applicant Characteristics Form. For verification purposes, the vouchering agency may require the applicant to present proof of family income and other information at the time of vouchering. On the other hand, the ES offices have the option of conducting income verifications "after the fact" on a sample of all vouchers issued.

Two basic forms are used once eligibility has been established: a voucher and a certification. A voucher is issued by the SESA or other vouchering agency to a qualified applicant. The applicant presents the voucher form to the employer, who, after deciding to hire the applicant, completes the employer declaration part of the voucher and returns the form to the SESA listed on the voucher. If an employer plans to hire an employee who seems to be eligible but does not have a voucher, the employer is permitted to request certification of eligibility in writing to the SESA. The employer certification form is completed by the SESA after receipt of the employer declaration or after certification request. The certification is then sent to the employer as back-up documentation for their tax return.

A voucher issued to an individual who is a member of an economically disadvantaged family is valid for 45 days after the date of issuance. Any voucher issued to an individual not required to meet the economically disadvantaged criteria does not have such a time limit.

2. EVALUATION STRATEGY

The presence of TJTC and the manner in which it is administered affect individuals in a number of different ways. First of all, the potential subsidy may bias employer recruitment and hiring behavior toward disadvantaged individuals, or toward individuals that might be suspected of being among the target groups, irrespective of whether the individuals are ultimately vouchered or certified. Our employer analysis (Bishop and

Hollenbeck 1986) and process study (Crosslin et al 1985) indicate that a key effect of TJTC is an increased tendency to use public agencies in recruitment.

A whole constellation of effects may occur once an individual actually applies or is induced to apply for a voucher. The individual may use the voucher in his or her job search. And if used, having an applicant notify an employer that they would be eligible for a tax credit if they are hired is an additional piece of information that may influence the hiring decision. In other cases, employers may initiate the vouchering process and make the hiring determination accordingly. In still other cases, the vouchering agency may pick and choose which clients to voucher. All of these potential happenstances are called voucher effects and we hypothesize that vouchering will be advantageous to those target group members who are vouchered and will place eligible individuals who are not vouchered at a relative disadvantage in the labor market.

Finally, certification effects result when an employer chooses to request a certification for a vouchered individual. Because the amount of the credit depends on the amount of wages paid and on the length of time the individual is with the firm, the act of requesting a certification may alter these terms of the employment relationship vis-a-vis other workers at the firm.

Because vouchering and certification, in general, affect different sets of individuals within and outside of the target groups, this study is comprised of separate net impact analyses for the two "treatments." For each of the analyses, we compare "pre- and post-treatment" outcome data for a treatment and a comparison sample of individuals. Because of sample size limitations, the study examines only four of the target groups: the economically disadvantaged youth and Vietnam-era veteran target groups, the AFDC/WIN target group, and the handicapped target group. Exhibit I-1 lists the treatment and comparison groups for each of the net impact analyses for each target group as well as lists the primary data sources. The outcomes examined are quarters of employment and average quarterly wages (for the certification analysis, we also looked at retention/turnover). The source of these data was the Unemployment Insurance quarterly wage record system and as documented in the Research Design document for this contract, to have a reasonable set of quarterly data before and after the treatment, we chose fiscal 1982 as the "treatment period."

The underlying assumption for the study is that, after controlling for variation in individual characteristics, any differences in earnings growth or change in quarters of employment after fiscal 1982 from before fiscal 1982 between the treatment group and the comparison group can be ascribed to TJTC (vouchering or certification). The validity of this assumption hinges on an ability to statistically control for differences in individual characteristics between the treatment and comparison groups. If differences are measurable and the data are available, then we can easily add covariates to the effects models. But, as is well-recognized, systematic differences along unmeasurable dimensions may exist and the outcomes must then be attributed jointly to the treatment and to the unmeasured differences. This is the selection problem. Our precise specification of outcomes and models is provided in chapter II. There we argue that selection is not a concern in the certification net impact analyses (because our comparison group is TJTC-eligible job finders). However, selection is a problem for the vouchering analysis and so a large part of chapter II is

EXHIBIT I-1

Employment and Training Administration

TREATMENT AND COMPARISON GROUPS

Analysis	Target Group	Treatment	Comparison Group	Data Sources
1. Voucher	Youth	Vouchered youth	Eligible, non-vouchered youth	ESARS, Local office records, and UI wage records
	Vets	Vouchered youth	Disadvantaged, nonvouchered vets	
	Welfare	Vouchered welfare	Nonvouchered welfare	
	Handicapped	Vouchered handicapped	Nonvouchered handicapped	
2. Certification	Youth	Certified youth	Eligible, non-certified youth who found jobs in or after FY1982	ESARS, Local office records, and UI wage records
	Vets	Certified vets	Disadvantaged, non-certified vets who found jobs	
	Welfare	Certified welfare	Welfare recipients, non-certified who found jobs	
	Handicapped	Certified handicapped	Handicapped, non-certified who found jobs	

devoted to presenting our strategy for dealing with that problem. In interpreting the empirical results in chapter IV, we attempt to caution the reader that selection bias may be present.

In the next section of this chapter, we review the previous evaluation evidence that has been published regarding TJTC.

3. PRIOR EVIDENCE OF THE EFFECTIVENESS OF TJTC

The research evidence concerning the effectiveness of TJTC has been mixed and comes from studies that are not always comparable. Nevertheless, the evidence seems to agree on the facts that TJTC has a uneven impact on various target groups, the tax credit results in some employment creation among the structually unemployed, and limited displacement of TJTC noneligibles seems to have occurred. No concensus has been reached on whether there are impacts on earnings or job retention, whether there has been displacement among the eligible population, or whether the social benefits in the form of employment creation exceed the social costs.

In analyzing the results of an experiment in Dayton, Ohio, Burtless and Cheston (1981) found that TJTC-eligible job seekers who were trained to inform employers of their eligibility for a tax credit had a lower placement rate than a control group of similar workers who were not so trained. A quasi-experiment in Wisconsin obtained similar results although the reduction in the placement rate was not statistically significant (Moran et al, 1982.) Both of these studies suggest that vouchering has a deleterious effect on employment, but it should be noted that both studies dealt with the AFDC/welfare target group. Hollenbeck and Smith (1984) found, through an entirely different methodology, that for the youth target group, eligibility for TJTC was not stigmatizing. In their study of employer hiring of entry level workers, they found that a job applicant "eligible for TJTC" generally had a positive, although statistically insignificant, influence on the "employability" ratings which an employer assigned to the applicant. This study was conducted by obtaining ratings from about 850 employers across the country of 11 randomly generated, fictitious job applications for young people aged 17-21.

All of these results are limited in their applicability to public policy. The Burtless and Cheston, and Moran et. al. studies were conducted in 1980-81, were limited to a single local labor market, and involved only a small number of individuals. TJTC changed considerably after 1980-81--target groups were added/changed, retroactive certifications were eliminated, and employer opinions considering eligibles may have changed as they gained experience with the program. The geographic limitation meant that the size and industry variation in potential employers was extremely limited. Finally, the Dayton experiment involved about 800 individuals, but only about 20% became employed. This means that the results are based on placement of about 150 individuals across 3 experimental groups. The Wisconsin study was even smaller. In that study, key results are based on a sample size of 32.

The Hollenbeck and Smith results are also dated--the survey was conducted in 1983--but more fundamentally the validity of the results rests on the accuracy of the simulation methodology. Whether employers actually favor job applicants who would be eligible for TJTC in their day-to-day operations could not be determined.

Bishop and Montgomery (1982) analyzed data from a survey of about 6000 employers undertaken in 1980. They addressed the issue of employment creation through two approaches. The employers were asked directly what impact TJTC and other wage subsidies had on employment levels, and about 25 percent reported that they had increased employment. The size of the reported employment increases was roughly 20 percent of the total number of subsidized workers hired. Econometric estimates of the impact of the subsidy program was even more favorable, specifically in firms with 20 or more employees. Estimates of the change in employment per subsidized worker ranged from .235 to .64. These estimates suggest that 25 percent or more of the certifications represent generated employment. However, the survey and methodology used in this study could not determine displacement effects that may occur at other firms. Furthermore, the data came from the earliest stages of the program (1979-80) and the data pertain to CETA-OJT contracts as well as to TJTC.

Bishop (1985) analyzed data from a second wave of the employer survey and found that TJTC in 1982 was having only a modest effect on employment at participating firms. When the TJTC usage variable was the ratio of certifications to employment, utilization (at levels less than .5) was found to increase employment at about the rate of 2 jobs for every 10 certifications. Furthermore, econometric analysis supported the hypothesis that TJTC raised the proportion of firms' work forces under the age of 25.

Christensen (1984) analyzed both the second wave employers survey used by Bishop (1985) and the March 1983 Current Population Survey. She suggests that targeted youth appeared to gain in employment without adverse effects on employment of the nonpoor young. This study is important because it is the only study of TJTC that can claim to get at the full equilibrium effects of TJTC, although it focuses only on youth and is thus not able to discern displacement of older workers by eligible youth.

Lorenz (1985) examined 3 years of earnings data for a sample of individuals vouchered and certified in Maryland or Missouri compared to individuals who were vouchered but not certified. He found that earnings were significantly higher for most subgroups of the TJTC certified sample, and in particular, the income gains were mostly accomplished by the approximately one-third of individuals who were certified and then made over $5,000 in the year following the hire. The Lorenz study is particularly valuable for its careful attention to retroactive versus non-retroactive certifications, but use of vouchered, noncertified individuals as a comparison group limits its generalizability to the vouchering process. In effect, the study has examined the earnings impact of certification as a treatment.

Finally, the Chicago Jobs Council (1985) surveyed employers in the Chicago area concerning TJTC and their experiences with TJTC eligible workers. They report that 27% of employers indicated they intentionally skewed hiring practice toward TJTC through active search or through preference in marginal cases. Again, however, it is impossible to gauge a displacement effect for this percentage. Furthermore, no earnings impacts were provided.

II. EVALUATION OF TJTC IMPACTS: THEORY AND MODELS

II. EVALUATION OF TJTC IMPACTS: THEORY AND MODELS

The purpose of the chapter is to describe how the impacts of the TJTC program on individual employment and earnings are estimated. Since TJTC can be thought of as a "treatment" applied to the individual, we begin by reviewing the economics literature relevant to estimating treatment effects, especially those of government employment and training programs. The primary concern here is ascertaining that the treatment group is identical, either *a priori* or after statistical adjustment, to the non-treatment or comparison group, except for the treatment itself. We then discuss how these considerations apply to the two TJTC treatment effects: vouchering and certification. In each case a principal strategy for comparison group selection and estimation methodology is presented, and in some cases alternative strategies are included to test the robustness of the results to changes in assumptions and specifications.

1. REVIEW OF THE LITERATURE

The problem of properly isolating and estimating treatment effects in non-experimental data is the subject of continuing controversy and research. One aspect of the problem is choosing the appropriate outcome or outcomes to measure in order to evaluate the effects of the treatment. Another aspect is choosing the best specification for estimating the effects of the treatment on the chosen outcomes. A major concern in both of these decisions is that of non-random selection, in which those selected for treatment have unobserved characteristics that are systematically different from those not selected. Since this last concern is most pervasive and probably most serious, it will be discussed first.

Consider a standard linear specification for estimating the determinants of earnings, a principal outcome:

$$(1) \quad Y_{it} = \underline{b}'\underline{X}_{it} + c_t T_i + e_i + e_t + e_{it}$$

where Y_{it} is earnings (or log earnings) for individual i in period t, $\underline{X}_{it}$ is a vector of characteristics usually including education and age or experience, $\underline{b}$ is the corresponding vector of coefficients, T_i is a binary variable for having received the treatment (i.e., participated in the program), c_t is the effect of the treatment in period t, e_i is an unobserved individual effect constant over time, e_t is an unobserved time-period effect constant over individuals, and e_{it} is an unobserved random effect, possibly autocorrelated. Since the number of time periods observed is usually relatively small, the time-period effect is easily handled by allowing the intercept to vary over time. The real problem of non-random selection occurs when the unobserved individual effects e_i or e_{it} are correlated with the treatment variable. Such a correlation could occur if those most likely to succeed are selected for treatment (the creaming problem), or conversely, if those most in need of help are selected into treatment. A somewhat different source of non-random selection is the censored sample problem, in which not all outcomes for all individuals are observed. For example, it may be the case that no earnings are observed for an individual in a given period, but whether this is due to unemployment, a labor force participation decision, or incomplete earnings data is unknown. If this problem is handled improperly, it can also lead to biased estimates of treatment effects.

A common starting point in specifying estimation methodology is the work of Ashenfelter (1978) on MDTA classroom trainees. He relies on an autoregressive earnings function, i.e., includes lagged values of Y_{it} on the right-hand-side of equation (1). This has the advantage that past earnings capture some unobservable individual effects that give the model much greater explanatory power. Cain (1975) and Goldberger (1972) have pointed out that if pre-program earnings are the sole selection criteria, then an autoregressive earnings function can consistently measure program effects. As Bassi (1983) notes, however, if the error term in this equation is autocorrelated, as it is likely to be in an earnings equation, this method will produce biased and inconsistent results. Bloom (1984) has also criticized Ashenfelter's methodology by showing that the effect of age is improperly specified, resulting in underestimation of the treatment effects. Other shortcomings of Ashenfelter's model have also been discussed (e.g., Cooley, Prescott, and McGuire 1981, Director 1979, and Nickell 1979, among others). To a large degree, autoregressive earnings model are no longer widely used in evaluation models.

Another principal work examining MDTA trainees is that of Kiefer (1979). He utilizes a fixed-effect model, in which all variables are represented by their deviations from their means over time. A very similar model is obtained simply by first-differencing all variables over time. This approach eliminates the individual fixed effect e_i, thereby eliminating concern about correlation between e_i and T_i biasing the estimated training coefficients. When earnings equations of this type are estimated jointly using generalized least squares, any intertemporal covariance in the random terms e_{it} (actually $e_{it}-e_{it-1}$ in the differenced model) is accounted for. The remaining potential problem is that e_{it} may be a selection factor itself, if, for instance, those with temporarily low earnings are selected in order to maximize observed earnings growth between pre-training and post-training periods. If e_{it} is correlated with T_i, the problem of biased coefficient estimates reappears. Kiefer addresses this problem by obtaining an instrumental variables estimate of T_i for use in the wage difference equation. There is a problem of selecting useful instruments that do not belong in the wage equation, but use of panel data and wage equation differencing eliminates any variables constant over time from the wage equation (assuming the linear specification is correct), which then become available to identify the predicted value of

T_i. Although this method provides consistent estimates of training effects under the most common violations of the usual OLS assumptions, two objections remain. First, coefficients of the predicted training variable are highly dependent upon the specification of the instrumental equation and the wage equation. Second, potentially useful information embodied in e_{it} about the nature of the selection effect is sacrificed.

Some testing of the appropriateness of fixed-effect vs. random effects (OLS) models has been performed by Bassi (1983, 1984). She also tests whether the underlying earnings structure is the same for trainees as for non-trainees, a subject which is mentioned but not thoroughly developed and tested by previous authors such as Ashenfelter and Kiefer. She puts forward a set of nested hypothesis tests which effectively handles increasingly more complex forms of non-random selection, and allows for autocorrelation of earnings errors. Bassi finds serious evidence of non-random selection and earnings structure incomparability among the white men in her sample (the Continuous Longitudinal Manpower Survey) which is uncorrectable using her models. All other sex/race subgroups, however, are found to be similar enough to allow consistent estimation of the program effects by using up to two years of pre-program data and a series of least-square estimation techniques.

The problem of different earnings structures between trainee and control groups merits further discussion. Although Chow-type tests on pre-program earnings equations, such as those used by Bassi, can point up such differences, it is not clear that the existence of these differences invalidates all testing for program effects. These differences may in fact be a structural reason for participation in training, in the expectation that training would help reduce these differences. In this case, proper use of interactions of training and other characteristics can both allow for initial structural differences and reveal program effects that vary by trainee. One particular difference is that earnings growth by age (or experience) can be slower for trainee groups, who often come from economically disadvantaged families. Bishop and Cain (1980) allow disadvantaged status to interact with the age variable, which permits the age slope of earnings to be flatter for the disadvantaged.

Venturing into the realm of nonlinear techniques, Barnow, Cain and Goldberger (1981) provide a methodology by which to control directly for sample selection bias, based on the earlier work by Heckman (1976) and Lee (1978). The approach here is to model selection into training directly in a stochastic decision model. Here, one enters training ($T_i = 1$) if

$$(2) \quad \underline{d}'\underline{Z}_{is} + u_{is} > 0,$$

where $\underline{Z}_{is}$ is a vector of observable characteristics in period s, the period prior to training, $\underline{d}$ is a vector of coefficients, and u_{is} is is a random error term; otherwise, one does not enter training. A sample selection problem occurs if u_{is} is correlated with the earnings error e_{it}, but this can be handled (under the assumption of joint normality of u_{is} and e_{it}) by estimating the coefficients in (2) using standard probit analysis, calculating the expected value of u_{is} given the known information via the inverse Mills' ratio, and including it in the wage equation (3):

$$(3) \quad Y_{it} = \underline{b}'\underline{X}_{it} + c_t T_i + \sigma_{ue} \lambda_i + v_{it}$$

Here, $\lambda_i = E(u_{is} | \underline{Z}_{is}, T_i)$ and $\sigma_{ue} = \text{cov}(u_{is}, e_{it})$. This extra term purges the correlation of T_i and e_{it}.

The principal problems with this approach include finding appropriate variables in $\underline{Z}_{is}$ to provide identification of the selectivity correction term and justifying the normality assumption (e.g., Olsen 1982). The fixed effect problem occurs in this formulation, but there is no reason first-differencing cannot be used. The implications of autocorrelation of the e_{it} for first-differencing here, in connection with the nature of the training effects, have been considered by Willke (1985). Silkman, Kelley and Wolf (1983) also utilize a model which explicitly controls for sample selection bias.

Ashenfelter and Card (1985) estimate the effects of CETA training using only means and other moments of trainee and control earnings for a nine-year period. Ultimately they employ a components-of-variance model employing permanent and transitory error components, as well as an individual earnings growth parameter (similar in spirit to that of Bloom or Bishop and Cain), with non-random selection into training based on both permanent and transitory factors. This method assumes that all exogenous variables have a simple fixed effect on earnings which enters the permanent component of the earnings variance. Transitory earnings effects are shown to have significant autocorrelation. They find a significant difference in earnings growth rates between trainees and controls, with trainees being the slow growth group, as expected. The selection bias effect is estimated as a free parameter of the earnings structure rather than explicitly as in a Heckman-style estimation, and shows significant selection due to lower-than-average earnings components. They allow selection to be based on earnings in either the training year or the year before it, and do not draw a firm conclusion as to which is the better choice, even though their estimates of training effects are sensitive to this choice.

As seen thus far, most training evaluations focus on earnings or wage equations. This focus is partly due to their ease of application to cost-benefit analyses. Gay and Borus (1980) investigate the use of a number of other labor force outcomes, mostly in connection with their correlations with earnings. Cavin and Maynard (1985) examine the percentage of post-program time employed and in the labor force in the analysis of the Supported Work demonstration. In some cases, the effects on earnings and employment are confounded, such as in the Kiefer study, because only those with observed earnings are used. One way to handle this problem is to estimate the effect of training on the probability of employment, and then on the the effect of earnings given that the individual was employed. This procedure is appealing in that it provides separately interpretable impact estimates that can be combined to yield a net impact on earnings.

Depending on the data source, arriving at a definition or measure of employment may involve some arbitrary decisions. One problem is the labor force participation decision, which Heckman has shown to involve non-random selection of those who participate. This problem is commonly sidestepped by assuming that for trainees, enrollment in training demonstrates some commitment to the labor force, and by choosing controls with some history of labor force participation. Although such measures probably reduce the magnitude of the problem, there is no guarantee that training impact estimates will be totally free of bias imparted by this selection problem. Other approaches have been to infer that if the control group is constructed or can be shown to match the trainee group on a set of other characteristics, unobserved characteristics are likely to be similar between the two groups (e.g., see Hahn and Lerman 1983 or Johnson et al. 1985). While such matchings may well reduce the probability of unobserved differences, it is not certain that they are eliminated. A strong consensus is emerging that only random selection for treatment can solve this problem.

A final consideration involves the problem of missing data. Non-response bias is a well-known concern in analysis using survey data. In the case of randomly missing data, deleting missing observations leads to unbiased but inefficient coefficients. Griliches, Hall and Hausman (1978) show, however, that efforts to correct this problem may lead to relatively small efficiency gains and may not be worth the effort. "Behaviorally missing" values are another story. If the presence of missing data, such as observations on earnings, is correlated with labor force outcomes, the equivalent of a self-selection problem is again present. In this case, steps to predict the possibility of missing data may reduce the extent of any resulting bias.

2. ESTIMATION METHODOLOGY

Summarizing the review in the previous section, we first note that no single dominant estimation strategy for the non-experimental case has emerged. However, several important factors are apparent. (1) Post-training outcomes must be compared to something, and generally both the trainee' histories and the outcomes of a comparison group of individuals are employed. (2) Non-random selection into a program is likely to be present, and can be based on both permanent and temporary earnings factors as well as other factors. (3) If trainee and control groups are from essentially different populations, there may be a difference in the intrinsic growth rates of their earnings. (4) Given that earnings histories are used both for comparison and as a selection factor, some recognition of the autocorrelation of transitory and earnings errors is desirable. (5) Although the censored sample problem due to labor force participation and other decisions is typically ignored, one can hedge by examining outcomes that would be affected by this problem in recognizably different ways.

Based on some of these considerations, a strategy to be used here to estimate the short-term impacts of TJTC treatments is to examine differences in average quarterly outcomes for pre- vs. post-treatment years. Average quarterly outcomes are used for several reasons. First, periods of different length may be compared this way, in that two pre-treatment years are used to construct the pre-treatment quarterly average, while the two post-treatment years are considered separately. Given some doubt as to the appropriate historical year to use because of the employment problems encountered near the treatment year but limited by the short labor force experience of some of the individuals, it appears preferable and more parsimonious to use the two available pre-treatment years in combination. How, it is clearly desirable to examine the two post-treatment years separately. Second, preliminary examination of the data revealed considerable variation in quarter-by-quarter outcomes, so averaging reduces the effects of some random variation and allows more precise estimation of treatment effects. Third, some of this quarter-by-quarter variation occurs because the exact time of the treatment during the treatment year is difficult to pinpoint in many cases, making a given calendar quarter in a post-treatment year anywhere from "n" to "n+3" quarters following the treatment. Given such variation, examination of quarter-by-quarter outcomes becomes less meaningful.

The alternative approach of taking differences from the overall mean for the outcomes (such as Kiefer used) could be employed instead of first-differencing, but these two techniques differ only in minor ways under the conditions of this evaluation. Either way, a true fixed effect is eliminated, which is the basic reason for choosing either technique. The difference in the selection bias effect between the two techniques is not at all clear given some uncertainty as to exactly when the selection occurs, and given nonzero autocorrelation of the transitory earnings error components which affect the selection. In the first-differenced model any selection effect operating in the treatment period is explicitly omitted, while it would be included in the mean-deviation model. Earnings can be quite irregular during the treatment period, another reason for omitting it explicitly. If selection occurs during the pre-treatment period, the first-differenced model will be more seriously affected, but autocorrelation of transitory errors affecting selection with future period errors reduces the "averaging-out" advantage of the mean-deviation model. To the extent that the mean-deviation model relies on comparing coefficients of training dummies across periods to interpret training effects, selection present in earlier periods will still be a problem. In light of all this, and given that first-differenced results are somewhat more straightforward to present and interpret, it is the preferable model for this situation.

To address the censored sampling problem, we chose to examine three outcomes:

- Average quarterly wages
- Average number of quarters employed (i.e., with nonzero wages)
- Average wages during employed quarters

The first two outcomes are very standard ones, but may be slightly biased if one group is less likely to participate in the labor force (voluntarily) than the other one. The third outcome counts wages only for those who decide to participate, but ignores the unemployment problem. By observing all three outcomes, it should be possible to analyze the impacts more completely. In any case, since all sample members contacted the Employment Service during the treatment year, we expect some degree of labor force attachment for all.

Since the impacts of TJTC vouchering and certification present slightly different estimation problems, each will be discussed separately.

(a) The Voucher Study

The vouchering treatment is similar to the standard manpower training effect treatment discussed earlier in this chapter. The treatments are applied to individuals, possibly selected in a non-random manner, and it is necessary to test whether and how vouchering affects earnings and employment outcomes. In each case the sample is divided into those TJTC eligibles who were vouchered and those who were not, so there are no eligibility considerations here.

The principal treatment effect is expected to be manifested in an outcome equation of the form:

$$(4) \quad Y_{ijt} = b_0 + b_1 VOUCH_i + b_2 PENV_j + b_3 VOUCH_i * PENV_j + b_4 PENC_j + b_5 VOUCH_i * PENC_j + \underline{d}'\underline{Z}_{ijt} + e_i + e_t + e_{it}$$

where $VOUCH_i$ is a dummy variable representing whether the individual was vouchered, and the voucher-voucher penetration rate interaction measures whether there are increasing or decreasing returns to agency vouchering activity. The vector $\underline{Z}_{ijt}$ contains other variables expected to affect earnings, including age, education, local employment conditions, and other ES services to the individual.

Outcome changes will be examined so as to eliminate possible bias resulting from correlation of the treatment variables and the individual fixed effect. Selection bias is still possible if the voucher treatment is correlated with the random error e_{is} in the pre-program period. One way to reduce the possibility of such bias is to reduce the probability that the individual was non-randomly selected. This can be done by eliminating all post-hiring vouchers from the sample and focus on sites where the policy was to voucher as many eligibles as possible. The vouchering treatment is different from the manpower training treatment in that the vouchering procedure is relatively costless, so vouchering a high proportion of the eligibles is feasible. In reality it is more likely that the majority of voucherees were vouchered in conjunction with a job referral so controlling for job referrals is the most direct selection correction.

The Barnow, Cain and Goldberger correction for sample selection can be used as an alternative control, however. In this case we model:

(5) $VOUCH_{ij} = f(PENC_j, WELF_i, VARY_i, \underline{Z}_{ij}, v_{ij})$

where $WELF_i$ = welfare status of individual i

$VARY_i$ = a measure of variation in previous earnings

v_{ij} = a random error term, having a joint bivariate normal distribution with e_{is}

$\underline{Z}_{ij}$ = other individual characteristics, not necessarily the same as in equation (4)

Being on welfare may reveal a smaller "stigma" effect of vouchering, and variation in earnings may reveal higher potential ability. The function f(.) is non-linear and can be estimated with a probit technique. The joint distribution of v_{ij} and e_{is} is due to unobserved factors which affect both vouchering and outcomes.

Expanding on (5), we say that:

$VOUCH_{ij} = 1$ if and only if $\underline{d}'\underline{X}_{ij} + v_{ij} > 0$, and
$VOUCH_{ij} = 0$ if and only if $\underline{d}'\underline{X}_{ij} + v_{ij} < 0$,

Where $\underline{X}_{ij}$ contains all the explanatory variables in (5).

Since e_{is} and v_{ij} are correlated, the expected value $E[e_{is} | VOUCH_{ij}] \neq 0$, which violates the assumptions of the standard regression model and produces inconsistent coefficient estimates. This can be corrected by replacing e_{is} in (6) with

$$(6) \quad e_{is} = E[e_{is} \mid VOUCH_{ij}, \underline{X}_{ij}] + w_{ij}$$
$$= b_6 A_{ij} + w_{ij}$$

where, by definition,

$$b_6 = Cov(v_{ij}, e_{is})/Var(v_{ij})$$

and is a coefficient to be estimated, and

$$A_{ij} = g(\underline{d}'\underline{X}_{ij})/G(\underline{d}'\underline{X}_{ij}) \text{ if } VOUCH_{ij} = 1$$
$$= -g(d'\underline{X}_{ij})/(1-G(\underline{d}'\underline{X}_{ij})) \text{ if } VOUCH_{ij} = 0.$$

Here g(.) is the normal probability density function and G(.) is the normal cumulative density function.

The new estimating equation, after having performed (5), is

$$(7)\quad (Y_{ijt} - Y_{ijs}) = b_1 VOUCH_i + b_2 PENV_j + b_3 VOUCH_i * PENV_j + b_4 PENC_j + b_5 VOUCH_i * PENC_j + b_6 A_{ij} + \underline{d}'(\underline{Z}_{ijt} - \underline{Z}_{ijs}) + (e_{it} - w_{is})$$

The results of estimating (4) in differenced form without the selection correction and (7) with the selection correction will be compared.

(b) The Certification Study

Having TJTC certification for a worker may influence an employer's training and retention of that worker. Hence, it is interesting to observe the difference in earnings and employment outcomes between TJTC-certified and other non-certified workers. At this stage, all certified workers, no matter what the vouchering practices of the Employment Service, are included in the treatment sample, and other TJTC-eligible non-certified job finders will serve as a comparison group. By limiting the comparison group to other job-finders, attention is focused on performance within the job, and the sample-selection problem should be mitigated. The outcome equation is:

$$(8)\quad Y_{ijt} = c_0 + c_1 CERT_i + \underline{d}'\underline{Z}_{ijt} + e_i + e_t + e_{it}$$

Here c_1 represents the effect of certification on the outcome after controlling for the variables present in $\underline{Z}_{ijt}$, which will be those used in the voucher study. Once again, examining outcome changes will eliminate the fixed effect problem. The effects of penetration rates will be added to this basic equation.

Outcomes examined will be average quarterly wages, average number of quarters employed (with nonzero wages), and average wages in quarters with nonzero wages. An additional outcome to be examined is the average number of quarters worked per employer in the pre-treatment period vs. the post-treatment period. This outcome will reveal the extent to which TJTC improves job retention by certified workers.

III. DATA

III. DATA

The goal of the analyses described in the previous chapter is to estimate the effects various TJTC "treatments" have on the earnings and other labor market outcomes of individuals. In order for these analyses to be done properly, we needed to be concerned with two issues: (1) the presence of appropriate individuals in the data sets, and (2) the presence of appropriate data for each individual. How we accomplished this will be discussed in this chapter. Precise documentation of the data sets is given in the Appendix to this report.

In general, 5 sets of data were used in constructing the data bases used to estimate the TJTC impacts--UI wage record data, program data, Employment Service client data (ESARS), state-specific and locality-specific economic data, and created variables. Each of these is described below.

1. UI WAGE RECORD DATA

Since earnings and employment data were necessary for the analyses, our general strategy was to rely on the UI wage record system to provide these outcomes.

For each of the 11 states that cooperated by supplying wage record data,[2] we are able to collect the following variables for the 20 quarters comprising FY 1980 - FY 1984:

- Individual social security number (SSN)
- Quarter and year
- Total earnings from employer in that quarter

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[2] State H/1 did not supply the wage record data despite agreeing to do so.

- Employer SIC code, ownership status, and size (if available)

Some workers had multiple employers in a quarter, so the individual records were managed to construct a single quarterly record with the following variables:

- SSN
- Quarter and year
- Total earnings in that quarter
- Total number of employers in that quarter
- Total earnings from principal employer (most wages)
- Principal employer SIC, ownership, and size (when available)
- Secondary employer SIC, ownership, and size (when available)

When no wages were present for a quarter, a record containing only SSN, quarter, and year was generated.

A limitation of the UI data was that not all individuals have wage records and exclusion of some individuals from the UI-wage record system has implications to be considered. The absence of these data for work done in small agriculture concerns, domestic service, or for "under the table" income may have resulted in underestimation of some people's earnings, most likely young people's earnings before their involvement with TJTC. If this underestimation is small, or if there is no systematic differences in this underestimation for treatment and nontreatment groups, we need not be too concerned about it. However, it may be the case that TJTC causes a transition from "under the table" market to the formal labor market for individuals who participate. To the extent that this is the case, we have estimated the impact of TJTC on formal earnings and outcomes, and overestimated its impact on true earnings.

Also, an individual may not be present in the UI wage records for some quarters because he or she was not a labor force participant or was unemployed. Due to the nature of the group of interest, many will have been unemployed, but many of the teenagers will just have left high school. In the estimation involving earnings of young people who may still have been in school, we attempted to identify such people and control for current enrollment by appropriate use of dummy variables.

People who visited an employment office in one state and worked in another state will not have UI wage records in the same state as their ESARS record (discussed below) and will appear to be nonmatches, or worse, will appear to have low incomes. We dealt with this problem by trying to avoid localities where cross-state work was likely in the voucher and certification studies. In addition, we used dummy variables for SMSAs that included counties on state boundaries.

2. TJTC VOUCHER AND CERTIFICATION DATA

The data for the vouchering and certification treatment groups came directly from a sample of TJTC administrative records collected at the 28 local offices in the 12 states visited during the contract. The study design called for selecting a random sample of about 300 vouchers per local office, so that the completed sample size would be about 8,400. We were able to achieve a larger sample because two states had been automated and we used the entire group of vouchers at the local offices in these states. Exhibit III-1 lists the completed sample sizes for the voucher and certification data by state and locality.

From the applicant characteristic form, we abstracted the following items of data:

EXHIBIT III-1 (1)

Employment and Training Administration

COMPLETED SAMPLE SIZE FOR VOUCHER AND CERTIFICATION DATA BY STATE AND LOCAL OFFICE

State/Locality	Certifications	Noncertifications	TOTAL*	
C/2	294	822	1,116	(1,087)
C/2/1	128	236	364	
C/2/2	101	295	396	
C/2/3	65	291	356	
D/1	2,598	2,854	5,452	(5,024)
D/1/1	561	1,060	1,621	
D/1/2	588	1,060	1,648	
D/1/3	1,449	734	2,183	
D/2	261	680	941	(846)
D/2/1	128	327	455	
D/2/2	133	353	486	
D/3	190	432	622	(596)
D/3/1	91	203	294	
D/3/2	99	229	328	
D/4	328	306	634	(625)
D/4/1	176	132	308	
D/4/2	152	174	326	
E/1	282	852	1,134	(1035)
E/1/1	92	261	353	
E/1/2	76	329	405	
E/1/3	114	262	376	
E/2	207	303	510	(480)
E/2/2	126	135	261	
E/2/3	81	168	249	
G/1	149	565	714	(648)
G/1/1	76	329	405	
G/1/2	73	236	309	

EXHIBIT III-1 (2)

State/Local	Certifications	Noncertifications	TOTAL	
G/2	818	1,439	2,257	(2257)
G/2/1	612	970	1,582	
G/2/2	206	469	675	
H/1	644	0	644	(630)
H/1/1	515	0	515	
H/1/2	129	0	129	
I/1	343	562	905	(833)
I/1/1	161	160	321	
I/1/2	91	183	274	
I/1/3	91	219	310	
J/1	153	454	607	(560)
J/1/1	93	362	329	
J/1/2	60	218	278	
TOTAL	6,267	9,269	15,536	(14,401)

*Number in parentheses represents number of cases left after deleting extraneous data and deleting cases in which voucher was not dated in FY82.

- SSN
- Birth date
- Sex
- Race
- Number in family
- Family income
- Veteran status
- Target groups

From the voucher/certification, we collected the following items:

- Case No. (voucher)
- Control No. (voucher)
- Voucher date (voucher)
- Certification date (date of employer request) (cert.)
- Employment start (cert.)
- Starting wage (cert.)
- Name of firm (cert.)
- Job title or occupation (cert.)

We post-coded the SIC's of firms and occupational codes from the DOT for all cases in which there was a certification.

3. ESARS DATA

The comparison groups for vouchering are comprised of individuals who encountered the Employment Service (ES) and meet certain criteria as specified in Chapter II above. The source for these data was from the Employment Services Automated Reporting System (ESARS).

ESARS is a system of data collection, storage, and retrieval documenting the activities of local and State Employment Service offices. Major elements of the system are reports of Job Service applications taken by ES, job orders received from employers using the Job Service to identify and select candidates for job openings, and transaction documents used to update those applicants and requests. The Federal component of the system consists of (1) the specification of micro data recording requirements for ES offices, (2) the specification of a set of reports in the form of monthly, quarterly, and cumulative annual tablutations of applications, job orders, and transactions, and (3) specifications of edit checks and accounting procedures for conversion of the raw data into the required reports. At the Federal level, ESARS is a set of reports on State Employment Service activities and clients, and a collection of computer programs to retrieve selected information from those reports.

For purposes of constructing our data base, we requested the ESARS micro data for all 12 states. There are two basic components to the system of micro data which are referred to as the 171 and the 351 data. The 171 data provide basic information about an ES applicant and date of encounter. Perhaps the most important item of data from the 171 file for our purposes was the "disadvantaged flag" indicating that the individual was economically disadvantaged. Federal requirements allowed states to opt to stop collecting that data on all persons as of FY82; and, unfortunately for our analysis, the disadvantaged status was not available for two states. The 351 data contains information on services provided to clients. In general, there is a single 351 record for each type of service provided -- referral, counseling, testing, etc., so there was typically many 351 records for each 171 record.

From ESARS records, we collected the following for each individual with a FY 1982 or FY 1983 record:

- SSN
- Sex

- Race/Ethnic status
- Date of birth
- Highest school grade completed
- Economically disadvantaged status
- Registration date
- Service delivery area or other office identifier
- County code
- Handicapped/disabled status
- Veteran status
- Welfare status
- Dislocated worker status
- Occupational code
- Citizenship
- Referral and placement information (from 351)

Referral and placement information were merged in from the 351 file by SSN.

Our sampling strategy for choosing ESARS records involved using all records that matched observations in our voucher and certified data base, and sampling from the remainder of the state's records. As described in the Research Design report, we oversampled economically disadvantaged cases and cases from the local offices comprising the study. Exhibit III-2 provides the ESARS sample sizes for the 11 states utltimately used in the analyses.

4. STATE-SPECIFIC AND LOCALITY-SPECIFIC DATA

In order to construct penetration rates and to control for local economic conditions in the models, we collected various data from states, SMSAs, and counties. From the states, we obtained:

EXHIBIT III-2

Employment and Training Administration

ESARS SAMPLE SIZES

State	ESARS Sample	Voucher Matches	Percentage Matched
C/2	644,576	732	68.6%
D/1	316,116	3,758	74.8
D/2	273,619	528	81.7
D/3	157,773	464	77.9
D/4	205,608	482	77.1
E/1	291,665	987	85.4
E/2	447,537	447	92.1
G/1	95,598	538	83.0
G/2	299,813	1,542	68.4
I/1	318,823	658	79.0
J/1	93,583	486	87.1
TOTAL	3,144,711	10,622	77.2%

- Voucher counts, by target group and local office
- Certification counts, by target group and local office
- Coverage areas (counties)

From various other sources, we created for each SMSA in the 12 states, a SMSA-level file with the following data:

- SMSA identifier
- Total TJTC eligibles visiting the ES (from ESARS 351 data)
- Total employment, by quarter (from ES202 data)
- Share of employment in various industries, by quarter (from ES202 data)

5. CREATED VARIABLES

The principal variables that were created involved constructing data from quarterly data, differences in yearly variables, dummy variables for some categorical variables, and penetration variables.

For the voucher impact analysis, we needed to measure outcomes before and after the ES registration date. For the certification analysis, the treatment date was the hiring date. We defined the pre-treatment year as the calendar year prior to the date in FY82 that the individual registered. The post-treatment year is the calendar year after registration. To make up for timing differences, a variable measuring the quarter that treatment took place was included in the analysis.

With the "years" just defined, we summed such variables as earnings and quarters worked, and averaged variables like quarterly unemployment rates and total employment in various industries, or took appropriate weighted averages of calendar year data. We created dummy variables for the following:

- Educational categories
- Occupational categories (when possible)
- Target group categories
- Employer industry and size categories for each year
- Working at all during each year
- Retention at same employer
- Being vouchered
- Being certified
- Whether registered at ES office

Other variables that were created were as follows:

- Age in each year
- Age squared
- Ratio of SMSA voucher, SMSA eligible population
- Ratio of local SMSA certificators to local eligible population
- Ratio of State certification count to State service industry
- employment
- Ratio of local voucher count to local service industry employment
- The presence of a job referral by the ES

The next chapter of the report turns to results of the estimation.

IV. RESULTS OF THE IMPACT ANALYSIS

IV. RESULTS OF THE IMPACT ANALYSIS

1. THE IMPACT OF TJTC VOUCHERING

As described in chapter II, the impact of TJTC vouchering is measured on three different outcomes: the change in average quarterly wages, the change in the average number of quarters worked per year, and the change in the average quarterly wage during quarters employed (with observed wages). These changes are measured with the same "prior period" - the eight quarters of fiscal years 1980 and 1981 - but with three different "post" periods: the eight quarters of fiscal years 1983 and 1984 together, and the four quarters of each of those years separately. These measures provide information on the effect of TJTC eligibility in 1982 on both employment and earnings, and on the duration of that effect.

In all target groups the same variables were used as control variables in the outcome change regressions: age and age squared, years of education, whether the individual was likely to have left school between periods (the difference of dummies in each year that represented whether AGE-EDUC <6), the change in total employment in the SMSA between periods, whether the individual lived in an SMSA or the residual area of the state, whether the person resided in an SMSA near the state border (to control for the likelihood of missing wages due to cross-border employment), and the presence of long (over 150 day) job referrals (to control for an Employment Service activity effect.)

OLS and selectivity-corrected regressions were run for every outcome using only a voucher dummy variable to represent the TJTC program effect, and OLS and selectivity-corrected regressions were run using the voucher variable and both penetration rates and their interactions with voucher status for the 1980-81 vs. 1983-84 measure of change in each outcome. The explanatory variables used to predict vouchering in the preliminary probits were age, age squared, years of education, welfare status previous to 1982, if any, the standard deviation of earned income in the eight quarters of 1980-81, and the presence and number of long job referrals received from the ES.

For the youth target group, sample statistics by sex/race subgroup and voucher status are shown in Exhibits IV-1 through IV-4. The vouchered groups generally show more dramatic improvement in 1983 than the non-vouchered, but the improvement of the non-vouchered is generally greater in 1984. Vouchered individuals are marginally younger in this sample, and the males are somewhat more educated. Income and employment levels are generally very comparable between vouchered and non-vouchered groups, subject to the differences just noted.

Exhibit IV-5 shows the results for the youth groups of regressions using the voucher dummy variable alone. The OLS results indicate significantly positive impacts of vouchering on total earnings and employment outcome changes, generally greater in 1983 than 1984, for all sex/race subgroups. These effects are fairly large for all race/sex groups, ranging up to an increase of nearly $800 for nonwhite males in 1983, and five weeks of employment for white males in 1983. However, the effect on earnings when employed is significantly negative for all but minority females, for whom it is near zero. The large employment impacts are large enough to make up for this, resulting in the total earnings change advantage of voucherees. TJTC vouchering appears to be helpful in finding employment, albeit not well-paying jobs vis-a-vis the comparison group of eligible but nonvouchered individuals.

The 'BCG' columns of these tables show the voucher dummy and lambda coefficients from the selectivity corrected regressions. The lambda coefficient essentially measures the correlation of

EXHIBIT IV-1

Employment and Training Administration

SAMPLE STATISTICS FOR YOUTH VOUCHER STUDY—WHITE MALES

	Non-Vouchered		Vouchered	
	Mean	Std. Error	Mean	Std. Error
Total wages, 1980	$1565	40.65	$1483	76.52
Total wages, 1981	2059	42.67	1927	85.60
Total wages, 1982	2081	38.73	1952	60.48
Total wages, 1983	2868	51.33	3315	102.29
Total wages, 1984	3944	65.06	3778	118.35
No. qtrs. employed, 1980	1.08	.01865	1.13	.03636
No. qtrs. employed, 1981	1.60	.01988	1.50	.04197
No. qtrs. employed, 1982	1.73	.01906	1.98	.03585
No. qtrs. employed, 1983	1.86	.02035	2.26	.04107
No. qtrs. employed, 1984	2.09	.02162	2.14	.04261
Ave. qtrly. wages when employed, 1980	$1261	21.16	$1141	38.27
Ave. qtrly. wages when employed, 1981	1108	15.88	1126	33.36
Ave. qtrly. wages when employed, 1982	1044	13.37	891	20.07
Ave. qtrly. wages when employed, 1983	1325	16.62	1279	28.33
Ave. qtrly. wages when employed, 1984	1649	19.56	1582	35.45
Age	21.65	.02577	21.49	.05200
Education	11.31	.02695	11.56	.05061
Voucher penetration rate	.1284	.00137	.24652	.00387
Certification pen. rate	.01658	.00015	.02603	.00044
N	6016		1412	

EXHIBIT IV-2

Employment and Training Administration

SAMPLE STATISTICS FOR YOUTH VOUCHER STUDY--NONWHITE MALES

	Non-Vouchered		Vouchered	
	Mean	Std. Error	Mean	Std. Error
Total wages, 1980	$1437	53.93	$1145	60.53
Total wages, 1981	1721	58.01	1996	87.22
Total wages, 1982	1638	48.20	1973	63.14
Total wages, 1983	2128	62.76	3000	94.79
Total wages, 1984	3114	77.13	3289	100.80
No. qtrs. employed, 1980	1.10	.02483	.98	.03169
No. qtrs. employed, 1981	1.44	.02586	1.68	.04224
No. qtrs. employed, 1982	1.52	.02588	2.08	.03698
No. qtrs. employed, 1983	1.55	.02756	2.27	.04221
No. qtrs. employed, 1984	1.98	.02089	2.20	.03993
Ave. qtrly. wages when employed, 1980	$1080	27.80	$1028	35.23
Ave. qtrly. wages when employed, 1981	990	23.86	1023	30.55
Ave. qtrly. wages when employed, 1982	902	18.29	843	20.58
Ave. qtrly. wages when employed, 1983	1134	23.04	1145	26.00
Ave. qtrly. wages when employed, 1984	1334	24.09	1333	30.70
Age	21.58	.03675	21.42	.05269
Education	11.42	.02874	11.58	.04646
Voucher penetration rate	.13160	.00141	.25376	.00389
Certification pen. rate	.01307	.00019	.02587	.00063
N	3270		1354	

EXHIBIT IV-3

Employment and Training Administration

SAMPLE STATISTICS FOR YOUTH VOUCHER STUDY--WHITE FEMALES

	Non-Vouchered		Vouchered	
	Mean	Std. Error	Mean	Std. Error
Total wages, 1980	$870	29.40	$1224	116.16
Total wages, 1981	1526	35.58	1717	84.16
Total wages, 1982	1591	32.67	1769	59.47
Total wages, 1983	2243	46.85	2776	96.24
Total wages, 1984	2920	53.23	3146	110.19
No. qtrs. employed, 1980	0.99	.02023	1.08	.04023
No. qtrs. employed, 1981	1.56	.02216	1.68	.04891
No. qtrs. employed, 1982	1.71	.02123	2.20	.04038
No. qtrs. employed, 1983	1.85	.02289	2.29	.04847
No. qtrs. employed, 1984	2.05	.02388	2.13	.04844
Ave. qtrly. wages when employed, 1980	$856	17.64	$963	58.03
Ave. qtrly. wages when employed, 1981	846	13.23	880	30.53
Ave. qtrly. wages when employed, 1982	819	11.54	720	18.63
Ave. qtrly. wages when employed, 1983	1043	15.24	1081	26.72
Ave. qtrly. wages when employed, 1984	1243	16.04	1316	32.96
Age	21.39	.02847	21.16	.05187
Education	11.65	.02981	11.68	.05720
Voucher penetration rate	.12820	.00518	.25669	.00446
Certification pen. rate	.01716	.00017	.02745	.00050
N	4868		1074	

EXHIBIT IV-4

Employment and Training Administration

SAMPLE STATISTICS YOUTH VOUCHER STUDY--NONWHITE FEMALES

	Non-Vouchered		Vouchered	
	Mean	Std. Error	Mean	Std. Error
Total wages, 1980	$908	39.03	$962	61.15
Total wages, 1981	1376	46.66	1483	74.25
Total wages, 1982	1487	42.70	1640	62.02
Total wages, 1983	1884	53.18	2546	61.91
Total wages, 1984	2642	63.78	2662	90.78
No. qtrs. employed, 1980	0.65	.02257	0.91	.03284
No. qtrs. employed, 1981	1.37	.02591	1.51	.04439
No. qtrs. employed, 1982	1.51	.02579	1.96	.04130
No. qtrs. employed, 1983	1.55	.02770	2.16	.04677
No. qtrs. employed, 1984	1.93	.02863	2.05	.04328
Ave. qtrly. wages when employed, 1980	$864	24.02	$885	33.82
Ave. qtrly. wages when employed, 1981	831	18.76	826	28.76
Ave. qtrly. wages when employed, 1982	818	16.00	744	21.01
Ave. qtrly. wages when employed, 1983	998	18.75	1029	26.65
Ave. qtrly. wages when employed, 1984	1156	20.07	1174	29.32
Age	21.42	.03602	21.26	.05644
Education	11.85	.02910	11.78	.05172
Voucher penetration rate	.12221	.00148	.26138	.00415
Certification pen. rate	.01270	.00019	.02633	.00068
N	3300		1154	

EXHIBIT IV-5 (1)

Employment and Training Administration

YOUTH VOUCHER IMPACTS WITHOUT PENETRATION RATE EFFECTSa

(Standard errors in parentheses)

MALES	WHITE			BLACK/HISPANIC		
	OLS	BCG		OLS	BCG	
	Voucher Coefficient	Voucher Coefficient	λ	Voucher Coefficient	Voucher Coefficient	λ
Change in average quarterly wages						
(83,84) vs. (80,81)	$72** (35)	500** (247)	-254* (140)	$113*** (32)	-502*** (153)	371*** (91)
83 vs. (80,81)	115*** (34)	674*** (242)	-327** (137)	195*** (32)	-365** (153)	337*** (92)
84 vs. (80,81)	22 (42)	315 (293)	-183 (165)	29 (37)	-643*** (174)	405*** (104)
Change in average quarters employed						
(83,84) vs. (80,81)	.311*** (.056)	1.40*** (.40)	-.64*** (.23)	.323*** (.056)	-.22 (1.16)	.32 (.43)
83 vs. (80,81)	.406*** (.060)	1.44*** (.42)	-.61** (.24)	.558*** (.061)	.17 (.83)	.22 (.33)
84 vs. (80,81)	.233*** (.064)	1.46*** (.45)	-.73*** (.25)	.091 (.063)	-.61** (.30)	.42** (.18)
Change in average wages during quarters employed						
(83,84) vs. (80,81)	-$162*** (56)	256 (197)	-191* (111)	-$151** (59)	-579*** (138)	359*** (83)
83 vs. (80,81)	-97* (57)	376** (184)	-239** (104)	-111* (60)	-536*** (128)	334*** (76)
84 vs. (80,81)	-217*** (66)	-22 (213)	-47 (120)	-171** (87)	-496*** (145)	302*** (87)

EXHIBIT IV-5 (2)

FEMALES	WHITE			BLACK/HISPANIC		
	OLS	BCG		OLS	BCG	
	Voucher Coefficient	Voucher Coefficient	λ	Voucher Coefficient	Voucher Coefficient	λ
Change in average quarterly wages						
(83,84) vs. (80,81)	$43*** (31)	-1950*** (206)	1126*** (116)	48* (27)	-712*** (152)	450*** (89)
83 vs. (80,81)	51 (32)	-1920*** (213)	1113*** (120)	128*** (27)	-607*** (152)	435*** (90)
84 vs. (80,81)	35 (38)	-2008*** (242)	1146*** (136)	-827*** (32)	-827*** (175)	470*** (103)
Change in average quarters employed						
(83,84) vs. (80,81)	.221*** (.064)	-2.87*** (.42)	1.73*** (.24)	.174*** (.057)	-1.30*** (.32)	.87*** (.19)
83 vs. (80,81)	.294*** (.068)	-2.73*** (.45)	1.70*** (.25)	.397*** (.062)	-.93*** (.35)	.78*** (.20)
84 vs. (80,81)	.185** (.074)	-2.97*** (.47)	1.74*** (.27)	-.051 (.065)	-1.67*** (.36)	.96*** (.21)
Change in average wages during quarters employed						
(83,84) vs. (80,81)	-$103* (54)	-1853*** (182)	1028*** (103)	-$3 (49)	-650*** (136)	395*** (80)
83 vs. (80,81)	-107* (58)	-1857*** (177)	1025*** (99)	55 (50)	-541*** (123)	342*** (72)
84 vs. (80,81)	-80 (61)	-1841*** (191)	914*** (107)	-36 (56)	-480*** (144)	299*** (85)

[a] Dollar figures are in 1982 $.

*Significant at the .10 level
**Significant at the .05 level
***Significant at the .01 level

the outcome change with the likelihood of being selected for vouchering (after controlling for known characteristics), and a positive value might be interpreted as evidence of "creaming." The white males alone show larger voucher coefficients than in the uncorrected regressions, and have negative selection coefficients. To the extent that the assumptions of this estimation technique are met, this result indicates that those selected for vouchering would normally have smaller increases in earnings, but that the vouchering itself has a large impact. The results for black males and both female groups is just the opposite, however. The lambda coefficients are significantly positive, suggesting that the vouchered individuals were most likely to have greater earnings and employment increases anyway, and the impact of vouchering was to dampen their improvement. Neither effect is implausible, but the size of the effect for white females is rather large. (This may be attributable to multicollinearity of the voucher variable and the lambda term.) The reason that white males may be different from the rest is that they may be the least likely to be discriminated against, so only the least employable were vouchered, while vouchers were given to the most employable of the other groups to help them counter discrimination or other employment barriers.

Comparison of OLS and selectivity results when penetration rates are used, as seen in Exhibit IV-6, yields fairly similar results. Correcting for selection bias increases the total effect of vouchering for white males but decreases it, sometimes dramatically, for the other groups. Penetration rate effects vary substantially from group to group, suggesting no single conclusion about their true effects, but not providing much evidence of large displacement effects. An odd result is that the net effect of certification penetration for voucherees is negative for all groups on the change in average quarterly wages, and also negative for all but minority males on the change in average quarters employed.

EXHIBIT IV-6 (1)

Employment and Training Administration

YOUTH VOUCHER IMPACTS WITH PENETRATION RATE EFFECTSa

(Standard errors in parentheses)

	Voucher	Voucher Penetration	(Voucher* Voucher Penetration)	Certification Penetration	(Voucher* Certification Penetration)	Net effect at penetration means	
						Voucher	Displacement
White Males							
Average quarterly wage - OLS	$258*** (70)	551*** (156)	-428 (271)	-2201 (1468)	-6220*** (2439)	69	34
Average quarterly wage - BCG	828*** (273)	644*** (153)	-565** (272)	-2372 (1470)	-6058** (2441)	625	43
Average quarters employed - OLS	.381*** (.112)	1.24*** (.25)	.09 (.44)	-6.83*** (2.37)	-9.08** (3.93)	.295	.046
Average quarters employed - BCG	1.47*** (.48)	1.42*** (.25)	-.18 (.44)	-7.19*** (2.37)	-8.75*** (3.94)	1.38	.082
Average wages during - OLS quarters employed	$16 (111)	-222 (344)	-159 (575)	-1213 (2363)	-4511 (4281)	-227	-49
Average wages during - BCG quarters employed	567** (218)	-303** (123)	-22 (217)	-1239 (1174)	-1475 (1948)	415	-59
Black/Hispanic Males							
Average quarterly wage - OLS	$154** (67)	-998*** (244)	627 (410)	4442** (1845)	-4971* (2846)	44	-52
Average quarterly wages - BCG	-416** (170)	-671*** (235)	419 (405)	3623** (1827)	-4152 (2832)	-493	-41
Average quarters employed - OLS	.377*** (.118)	-2.11*** (.43)	1.07 (.71)	8.03* (3.21)	-4.90 (4.96)	.142	-.199
Average quarters employed - BCG	-.004 (1.09)	-1.49*** (.41)	.55 (.83)	3.97 (3.11)	-2.63 (5.08)	-.211	-.144
Average wages during - OLS quarters employed	-208* (127)	-1167** (532)	681 (848)	1456 (3455)	969 (5444)	-269	-135
Average wages during - BCG quarters employed	-642*** (153)	-650*** (212)	667* (366)	3473** (1650)	-2529 (2559)	-613	-40

EXHIBIT IV-6 (2)

	Voucher	Voucher Penetration	(Voucher* Voucher Penetration)	Certification Penetration	(Voucher* Certification Penetration)	Net effect at penetration means	
						Voucher	Displacement
White Females							
Average quarterly wages - OLS	143*** (61)	395*** (136)	166 (250)	-1601 (1287)	-4314* (2243)	132	31
Average quarterly wage - BCG	-2037*** (224)	565*** (131)	-34 (248)	-293 (1283)	-4095** (2225)	-2040	67
Average quarters employed - OLS	.132 (.125)	.901*** (.276)	.609 (.507)	-8.97*** (2.61)	-5.07 (4.55)	.134	-.038
Average quarters employed - BCG	-3.40*** (.46)	1.52*** (.27)	.57 (.51)	-6.87*** (2.62)	-3.77 (4.55)	-3.16	.076
Average wages during - OLS quarters employed	$85 (107)	622 (352)	-1300 (581)	-2735 (2396)	1550 (4516)	-122	33
Average wages during - BCG quarters employed	-1850*** (199)	-49 (116)	-90 (220)	1642 (1139)	-420 (1974)	-1852	22
Black/Hispanic Females							
Average quarterly wages - OLS	$85 (59)	-254 (190)	409 (371)	1770 (1552)	-5501** (2646)	37	-9
Average quarterly wages - BCG	-644*** (166)	-39 (185)	230 (368)	1413 (1540)	-4336 (2632)	-671	13
Average quarters employed - OLS	.182 (.123)	-1.69*** (.40)	1.29* (.78)	2.94 (3.25)	-5.06 (5.54)	.022	-.169
Average quarters employed - BCG	-1.15*** (.35)	-1.20*** (.39)	.87 (.77)	1.86 (3.23)	-2.42 (5.52)	-1.25	-.123
Average wages during - OLS quarters employed	$162 (109)	-139 (387)	-198 (720)	4131 (2885)	-5818 (5118)	30	35
Average wages during - BCG quarters employed	-646*** (149)	-181 (165)	184 (329)	3947*** (1374)	-4199* (2349)	-652	28

aDollar figures are in 1982 $.

*Significant at the .10 level
**Significant at the .05 level
***Significant at the .01 level

Sample statistics for the veterans samples are shown in Exhibits IV-7 and IV-8. Samples sizes here are the smallest of any target group, and reduce the precision of some of the regression results. Among whites, both voucherees and non-vouchered eligibles reach a trough in earnings in 1982, although the vouchered group shows the quickest improvement in 1983. The employment situation does not improve for the non-vouchered group in 1983, but there is dramatic improvement for the vouchered group. The situation is somewhat similar in the minority sample but not as marked.

The regression results (see Exhibit IV-9) confirm what was seen in the sample statistics. Vouchering appears to have a significant positive impact on employment in the white sample, especially in 1982. The effect on employed-quarter wages is just the opposite, however, being significantly negative and large, averaging $651 less per quarter employed. The net result is that the change in average quarterly wages is negative, but not significantly so. Again, TJTC appears to be providing jobs, but its effect on earnings is not as distinct because the jobs are low-paying. Veterans, among all target groups, are probably most able to get relatively well paying jobs, so the wage difference is greatest here. The effect on the black and Hispanic group is generally similar, although the average wage effect is slightly positive because the employment and employed-quarter wage effects are not as large; none of these coefficients is statistically significant, however.

The BCG regressions result in negative estimated covariances between the likelihood of being vouchered and outcome improvements with some statistical significance in 1983. There is probably little need to give vouchers to the most employable of the veterans, so those that get vouchers are the least likely to succeed on their own. This correction results in a reversal of

EXHIBIT IV-7

Employment and Training Administration
SAMPLE STATISTICS FOR VETERANS VOUCHER STUDY--WHITES

	Non-Vouchered		Vouchered	
	Mean	Std. Error	Mean	Std. Error
Total wages, 1980	$2895	237.97	$3372	270.19
Total wages, 1981	3019	226.84	3439	292.74
Total wages, 1982	2905	213.30	2378	148.61
Total wages, 1983	3575	263.77	3681	204.93
Total wages, 1984	4720	328.64	4589	266.91
No. qtrs. employed, 1980	1.29	.07845	1.32	.07697
No. qtrs. employed, 1981	1.58	.07783	1.55	.07689
No. qtrs. employed, 1982	1.75	.07601	1.76	.06985
No. qtrs. employed, 1983	1.62	.07785	2.16	.07327
No. qtrs. employed, 1984	1.85	.08551	2.13	.07963
Ave. qtrly. wages when employed, 1980	$2011	107.22	$2200	109.76
Ave. qtrly. wages when employed, 1981	1616	78.84	1873	110.02
Ave. qtrly. wages when employed, 1982	1386	71.14	1233	51.86
Ave. qtrly. wages when employed, 1983	1839	92.45	1508	59.39
Ave. qtrly. wages when employed, 1984	2207	108.12	1918	78.91
Age	31.58	.1512	32.23	.2257
Education	12.22	.0831	12.45	.0928
Voucher penetration rate	.14129	.00583	.22848	.00675
Certification pen. rate	.01552	.00055	.02390	.00068
N	394		422	

EXHIBIT IV-8

Employment and Training Administration

SAMPLE STATISTICS FOR VETERANS VOUCHER STUDY--NONWHITES

	Non-Vouchered		Vouchered	
	Mean	Std. Error	Mean	Std. Error
Total wages, 1980	$3410	523.67	$2462	271.12
Total wages, 1981	3382	498.81	3454	331.23
Total wages, 1982	2723	312.31	2705	234.58
Total wages, 1983	3062	460.56	3920	343.54
Total wages, 1984	4377	571.64	4188	351.90
No. qtrs. employed, 1980	1.42	.13946	1.27	.08348
No. qtrs. employed, 1981	1.79	.12830	1.89	.09652
No. qtrs. employed, 1982	1.87	.12297	2.07	.08573
No. qtrs. employed, 1983	1.63	.14034	2.05	.10117
No. qtrs. employed, 1984	1.92	.14946	2.00	.09668
Ave. qtrly. wages when employed, 1980	$1915	196.87	$1672	115.45
Ave. qtrly. wages when employed, 1981	1557	166.15	1625	117.82
Ave. qtrly. wages when employed, 1982	1276	105.40	1165	73.52
Ave. qtrly. wages when employed, 1983	1556	169.09	1680	110.24
Ave. qtrly. wages when employed, 1984	1987	192.85	1858	117.08
Age	31.12	.30016	31.27	.2743
Education	12.22	.13636	12.39	.11171
Voucher penetration rate	.13356	.00750	.22337	.00744
Certification pen. rate	.01452	.00099	.02058	.00115
N	136		257	

EXHIBIT IV-9

Employment and Training Administration

VETERANS VOUCHER IMPACTS WITHOUT PENETRATION RATE EFFECTSa

(Standard errors in parentheses)

	WHITE			NONWHITES		
	OLS	BCG		OLS	BCG	
	Voucher Coefficient	Voucher Coefficient	λ	Voucher Coefficient	Voucher Coefficient	λ
Change in average quarterly wages						
(83,84) vs. (80,81)	-$114 (114)	407 (547)	-370 (341)	52 (159)	752 (778)	-424 (474)
83 vs. (80,81)	-129 (114)	781 (544)	-619* (339)	170 (166)	664 (815)	-305 (497)
84 vs. (80,81)	-65 (133)	93 (620)	-144 (385)	-60 (176)	856 (845)	-548 (514)
Change in average quarters employed						
(83,84) vs. (80,81)	.434*** (.141)	1.37** (.68)	-.64 (.42)	.095 (.197)	1.16 (.97)	-.68 (.59)
83 vs. (80,81)	499*** (.148)	1.96***b (.71)	.96** (.44)	.207 (.215)	1.32 (1.06)	-.69 (.65)
84 vs. (80,81)	.432*** (.161)	.89 (.75)	-.35 (.47)	-.027 (.217)	.98 (1.04)	-.63 (.63)
Change in average wages during quarters employed						
(83,84) vs. (80,81)	-$851*** (192)	178 (424)	-332 (284)	-245 (269)	467 (698)	-279 (425)
83 vs. (80,81)	-720*** (199)	280 (400)	-364 (249)	-128* (275)	165 (683)	-56 (418)
84 vs. (80,81)	-527** (222)	32 (440)	-186 (273)	-274 (301)	508 (684)	-386 (416)

aDollar figures are in 1982 $.

bInitial estimate of corrected regression variance is negative. Greene's (1981) correction used instead.

*Significant at the .10 level

**Significant at the .05 level

***Significant at the .01 level

the overall voucher effect, making it positive, but still not significant, for average wages.

Exhibit IV-10 shows that TJTC penetration may have some displacement effect for veterans, especially minority veterans. The certification penetration effect for the non-vouchered comparison group members is negative and significant for most of the earnings outcomes as well as for employment of whites. The availability of TJTC may have the most effect on veterans seeking higher wage jobs. Certification penetration rate effects are generally not so large for the vouchered. Voucher rate effects are generally not large for the vouchered, and voucher penetration rate effects are positive for white non-voucherees, but mildly negative for black non-voucherees. Net voucher penetration rate effects for voucherees are consistently positive, indicating some increasing returns to vouchering.

Exhibit IV-11 through IV-14 display sample statistics for the welfare samples. A clear trough is seen in 1982, and there is not an obvious difference in recovery rates for males, although female voucherees seem to show sharper improvement in 1983. The non-vouchered groups are somewhat older, and in some cases less educated. The OLS results in Exhibit IV-15 show very few significant voucher effects, the only significant ones being negative for employed-quarter wages for minority males. This lack of significance is generally due to small effects, not large standard errors. If there is any pattern to these effects it is the one seen often before, that is, that vouchering increases employment but reduces average employed-quarter wages, resulting in small positive or negative effects on average earnings.

EXHIBIT IV-10

Employment and Training Administration

VETERANS VOUCHER IMPACTS WITH PENETRATION RATE EFFECTS[a,b]

(Standard errors in parentheses)

	Voucher	Voucher Penetration	(Voucher* Voucher Penetration)	Certification Penetration	(Voucher* Certification Penetration)	Net effects at penetration means	
						Voucher	Displacement
Whites							
Avg. quarterly wages - OLS	-454** (217)	1698** (713)	210 (869)	-21514*** (7556)	11981 (8984)	-246	-94
Avg. quarterly wages - BOG	-78 (588)	1903*** (693)	-22 (858)	-21413*** (7514)	12253 (8926)	155	-57
Avg. qtrs. employed - OLS	-.392 (.268)	1.74** (.88)	1.30 (1.07)	-31.88*** (9.30)	26.34** (11.04)	.170	-.249
Avg. qtrs. employed - BOG	.28 (.72)	2.00** (.85)	.97 (1.05)	-32*** (9.23)	26.8** (11.0)	1.43	.222
Avg. wage during qtrs. employed - OLS	-712** (351)	1839 (1381)	-598 (1864)	-18722 (13611)	9979 (16116)	-683	-59
Avg. wage during qtrs. employed - BOG	53 (458)	550 (542)	13 (870)	-10003* (5878)	4446 (6982)	63	-72
Black/Hispanic							
Avg. quarterly wages - OLS	-987 (316)	-1001 (1510)	2931 (1851)	-33572*** (12645)	34720** (14716)	-532	-621
Avg. quarterly wages - BOG	-384 (822)	-1124 (1484)	2991* (1819)	-29799*** (11630)	30967*** (13800)	78	-863
Avg. qtrs. employed - OLS	-1.07** (.394)	-3.68* (1.88)	5.46** (2.31)	-17.43 (15.76)	21.65 (18.33)	-.586	-.745
Avg. qtrs. employed - BOG	-.011 (1.02)	-3.90** (1.85)	5.57** (2.27)	-11.08 (14.50)	15.31 (17.20)	.449	-1.097
Avg. wages during qtrs. employed - OLS	-1407** (582)	2004 (3089)	1084 (3860)	-50049** (22247)	51748* (26491)	-682	-459
Avg. wages during qtrs. employed - BOG	-156 (742)	530 (1340)	546 (1642)	-30381*** (10499)	28118** (12459)	38	-508

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[a] Dollar figures are in 1982 $.
[b] All impacts are changes for (83,84) vs. (80,81)

*Significant at the .10 level
**Significant at the .05 level
***Significant at the .01 level

EXHIBIT IV-11

Employment and Training Administration

SAMPLE STATISTICS FOR WELFARE VOUCHER STUDY—WHITE MALES

	Non-Vouchered		Vouchered	
	Mean	Std. Error	Mean	Std. Error
Total wages, 1980	$3109	77.97	$3277	281.18
Total wages, 1981	2980	76.36	2773	251.55
Total wages, 1982	2612	71.19	2001	177.69
Total wages, 1983	3253	83.92	2783	211.99
Total wages, 1984	4299	95.88	3709	278.35
No. qtrs. employed, 1980	1.46	.02296	1.64	.08064
No. qtrs. employed, 1981	1.54	.02239	1.57	.07854
No. qtrs. employed, 1982	1.45	.02234	1.55	.06918
No. qtrs. employed, 1983	1.54	.02391	1.72	.08060
No. qtrs. employed, 1984	1.85	.02501	1.88	.08411
Ave. qtrly. wages when employed, 1980	$1833	31.50	$1717	101.12
Ave. qtrly. wages when employed, 1981	1617	28.93	1478	93.72
Ave. qtrly. wages when employed, 1982	1483	27.80	1087	68.54
Ave. qtrly. wages when employed, 1983	1776	33.84	1398	78.56
Ave. qtrly. wages when employed, 1984	2009	33.28	1693	92.81
Age	30.30	.1484	29.46	.4616
Education	10.95	.0408	11.12	.1177
Voucher penetration rate	.15131	.00116	.15486	.00412
Certification pen. rate	.01172	.00018	.01066	.00044
N	4463		382	

EXHIBIT IV-12

Employment and Training Administration

SAMPLE STATISTICS FOR WELFARE VOUCHER STUDY--NONWHITE MALES

	Non-Vouchered		Vouchered	
	Mean	Std. Error	Mean	Std. Error
Total wages, 1980	$2673	86.83	$2541	298.22
Total wages, 1981	2354	84.86	2199	254.65
Total wages, 1982	1967	75.24	1610	186.72
Total wages, 1983	2203	84.41	2219	238.30
Total wages, 1984	3086	99.70	3016	264.39
No. qtrs. employed, 1980	1.41	.02726	1.42	.08122
No. qtrs. employed, 1981	1.38	.02663	1.38	.08372
No. qtrs. employed, 1982	1.28	.02668	1.49	.07536
No. qtrs. employed, 1983	1.28	.02790	1.54	.09240
No. qtrs. employed, 1984	1.64	.02913	1.87	.09378
Ave. qtrly. wages when employed, 1980	$1558	34.71	$1480	115.71
Ave. qtrly. wages when employed, 1981	1359	34.49	1339	106.61
Ave. qtrly. wages when employed, 1982	1254	33.60	905	73.48
Ave. qtrly. wages when employed, 1983	1400	38.22	1187	94.22
Ave. qtrly. wages when employed, 1984	1559	36.96	1359	86.13
Age	28.64	.17269	26.83	.43109
Education	10.90	.04219	11.51	.09827
Voucher penetration rate	.14718	.00115	.14531	.00348
Certification pen. rate	.00984	.00021	.00051	.00051
N	2996		303	

EXHIBIT IV-13

Employment and Training Administration

SAMPLE STATISTICS FOR WELFARE VOUCHER STUDY--WHITE FEMALES

	Non-Vouchered		Vouchered	
	Mean	Std. Error	Mean	Std. Error
Total wages, 1980	$2079	55.12	$2019	161.35
Total wages, 1981	2349	59.06	1862	156.11
Total wages, 1982	2071	55.51	1436	137.97
Total wages, 1983	2438	64.05	2263	179.47
Total wages, 1984	3153	74.02	3084	203.34
No. qtrs. employed, 1980	1.33	.02285	1.48	.07725
No. qtrs. employed, 1981	1.61	.02285	1.56	.07585
No. qtrs. employed, 1982	1.51	.02247	1.54	.06667
No. qtrs. employed, 1983	1.53	.02386	1.68	.08020
No. qtrs. employed, 1984	1.78	.02471	1.99	.08279
Ave. qtrly. wages when employed, 1980	$1326	23.86	$1187	67.58
Ave. qtrly. wages when employed, 1981	1207	21.90	989	57.54
Ave. qtrly. wages when employed, 1982	1121	21.15	759	49.85
Ave. qtrly. wages when employed, 1983	1328	25.58	1141	62.18
Ave. qtrly. wages when employed, 1984	1514	26.35	1340	64.92
Age	31.51	.1432	29.39	.04083
Education	11.01	.0336	11.02	.09604
Voucher penetration rate	.1364	.00122	.22764	.00629
Certification pen. rate	.01001	.00013	.01405	.00045
N	4640		406	

EXHIBIT IV-14

Employment and Training Administration

SAMPLE STATISTICS FOR WELFARE VOUCHER STUDY--NONWHITE FEMALES

	Non-Vouchered		Vouchered	
	Mean	Std. Error	Mean	Std. Error
Total wages, 1980	$2032	64.73	$1893	167.40
Total wages, 1981	2473	73.27	1528	143.84
Total wages, 1982	2131	69.57	1249	107.35
Total wages, 1983	2440	76.45	1957	140.55
Total wages, 1984	3074	86.25	2862	205.37
No. qtrs. employed, 1980	1.22	.02460	1.35	.07464
No. qtrs. employed, 1981	1.57	.02561	1.37	.07183
No. qtrs. employed, 1982	1.44	.02510	1.41	.07002
No. qtrs. employed, 1983	1.48	.02649	1.70	.07914
No. qtrs. employed, 1984	1.77	.02679	1.94	.08195
Ave. qtrly. wages when employed, 1980	$1358	29.89	$1206	70.76
Ave. qtrly. wages when employed, 1981	1295	29.29	915	59.14
Ave. qtrly. wages when employed, 1982	1165	27.80	764	47.02
Ave. qtrly. wages when employed, 1983	1327	30.10	998	51.54
Ave. qtrly. wages when employed, 1984	1428	30.34	1239	64.13
Age	29.45	.1527	27.18	.3673
Education	11.30	.0323	11.43	.0859
Voucher penetration rate	.14203	.00135	.18602	.00496
Certification pen. rate	.00944	.00016	.01543	.00067
N	3756		389	

EXHIBIT IV-15 (1)

Employment and Training Administration

WELFARE VOUCHER IMPACTS WITHOUT PENETRATION RATE EFFECTSa

(Standard errors in parentheses)

MALES	WHITE			BLACK/HISPANIC		
	OLS	BCG		OLS	BCG	
	Voucher Coefficient	Voucher Coefficient	λ	Voucher Coefficient	Voucher Coefficient	λ
Change in average quarterly wages						
(83,84) vs. (80,81)	-$66** (76)	4021*** (817)	-2061*** (409)	-$11 (70)	284 (800)	-154 (410)
83 vs. (80,81)	-60 (77)	3869*** (822)	-1982*** (411)	2 (71)	60 (827)	-32 (416)
84 vs. (80,81)	-70 (87)	4157*** (930)	-2133*** (465)	-17 (79)	465 (907)	-250 (465)
Change in average quarters employed						
(83,84) vs. (80,81)	.055 (.096)	5.14**b (1.03)	-2.57*** (.52)	.138 (.097)	.087 (1.12)	.024 (.57)
83 vs. (80,81)	.116 (.101)	5.00***b (1.08)	-2.47*** (.54)	.150 (.103)	.50 (1.18)	-.18 (.61)
84 vs. (80,81)	-.006 (.107)	5.28***b (1.15)	-2.67*** (.57)	.133 (.110)	-.42 (1.27)	.28 (.65)
Change in average wages during quarters employed						
(83,84) vs. (80,81)	-$126 (136)	3538*** (672)	-1836*** (336)	-$287** (144)	-728 (708)	322 (363)
83 vs. (80,81)	-87 (148)	3046*** (661)	-1577*** (331)	-292** (152)	-1041* (650)	479 (332)
84 vs. (80,81)	-145 (151)	2820*** (673)	-1356*** (337)	-238 (159)	-150 (756)	44 (371)

FEMALES	WHITE			BLACK/HISPANIC		
	OLS	BCG		OLS	BCG	
	Voucher Coefficient	Voucher Coefficient	λ	Voucher Coefficient	Voucher Coefficient	λ
Change in average quarterly wages						
(83,84) vs. (80,81)	-$65 (55)	-556* (347)	316* (176)	$24 (58)	-878** (428)	469** (222)
83 vs. (80,81)	49 (54)	-460 (339)	259 (172)	9 (55)	-583 (421)	306 (218)
84 vs. (80,81)	76 (63)	-697* (399)	398* (203)	31 (63)	-1195** (486)	639** (251)
Change in average quarters employed						
(83,84) vs. (80,81)	.118 (.093)	-1.36** (.59)	.75** (.30)	.080 (.091)	-1.71** (.70)	.93** (.36)
83 vs. (80,81)	.074 (.097)	-1.22** (.61)	.65** (.31)	.135 (.096)	-1.35* (.74)	.77** (.38)
84 vs. (80,81)	.147 (.105)	-1.60** (.66)	.89*** (.34)	.005 (.101)	-2.14*** (.77)	1.12*** (.40)
Change in average wages during quarters employed						
(83,84) vs. (80,81)	$8 (99)	3 (281)	-14 (141)	-$32 (102)	-664* (381)	357* (197)
83 vs. (80,81)	60 (101)	123 (215)	-56 (78)	-53* (103)	-268 (343)	132 (177)
84 vs. (80,81)	-36 (112)	44 (279)	-39 (131)	-34 (117)	-641* (384)	346* (199)

[a] Dollar figures are in 1982 $.
[b] Initial estimate of corrected regression variance is negative. Greene's (1981) correction used instead.

*Significant at the .10 level
**Significant at the .05 level
***Significant at the .01 level

The selectivity regressions indicate some negative selection of white males for vouchering (similar to the youth result), causing the estimated effect of vouchering to be more positive. However, the estimates here are too large to be reliable. Selection effects are relatively small for minority males. For females, the lambda coefficients are usually positive and often significant, suggesting the possibility of some creaming or self-selection and also reducing the OLS positive vouchering effect to significantly negative effects dominated by reduced employment.

The penetration rate effects shown in Exhibit IV-16 indicate that there may be some displacement due to TJTC activity for all groups except white males. Certification penetration rate effects for non-voucherees and the net displacement effects are negative in most cases. It may be that employers are not willing to create new jobs to be filled by welfare recipients, and are less willing to take welfare recipients unless they are vouchered (assuming the employer knows the welfare status of the applicant, which may not be the case). Net voucher penetration rate effects for voucherees are generally positive except for minority males and suggests that there are increasing returns to vouchering, especially among females where the estimates best conform to this hypothesis. The selectivity regressions give qualitatively similar results, although as before their coefficient estimates tend to be larger.

The sample statistics for the handicapped samples, shown in Exhibits IV-17 and IV-18 reveal that the handicapped voucherees have somewhat lower income but not employment levels, and show faster improvement in 1983 than the non-voucherees. Voucherees are somewhat younger, and the females are more educated. The OLS regression results in Exhibit IV-19 show consistently large and positive results of vouchering for both male and female groups. This effect extends even to employed-quarter wages, which TJTC has tended to reduce in other groups. These effects are in the

EXHIBIT IV-16 (1)

Employment and Training Administration

WELFARE VOUCHER IMPACTS WITH PENETRATION RATE EFFECTS[a]

(Standard errors in parentheses)

	Voucher	Voucher Penetration	(Voucher* Voucher Penetration)	Certification Penetration	(Voucher* Certification Penetration)	Net effect at penetration means	
						Voucher	Displacement
White Males							
Average quarterly wages - OLS	$0 (170)	1175*** (287)	-646 (989)	-1983 (1858)	1995 (9161)	$62	155
Average quarterly wages - BCG	4492*** (885)	1289*** (276)	-1092 (986)	-1447 (1829)	-8412 (9317)	4418	180
Average quarters employed - OLS	.037 (214)	2.40 (.38)	.017 (1.24)	-4.79** (2.33)	-1.15 (11.5)	.348	.307
Average quarters employed - BCG	5.55***[b] (1.11)	2.61*** (.35)	-.57 (1.24)	-3.94* (2.30)	-14.24 (11.7)	5.67	.347
Average wages during quarters employed - OLS	-$61 (321)	-1043** (522)	-679 (1933)	2461 (2811)	4215 (14880)	-257	-129
Average wages during quarters employed - BCG	3963*** (730)	-257 (227)	-812 (813)	2130 (1508)	-5759 (7680)	3759	-14
Black/Hispanic Males							
Average quarterly wages - OLS	-$190 (180)	-1264*** (358)	831 (1381)	-2851 (2071)	5371 (9318)	-226	-214
Average quarterly wages - BCG	21 (837)	-1150*** (357)	721 (1383)	-1588 (2013)	4086 (9300)	-16	-185
Average quarters employed - OLS	.115 (.250)	-2.66*** (.50)	-.672 (1.92)	-.506 (2.87)	10.91 (12.93)	-.264	-.396
Average quarters employed - BCG	.026 (1.18)	-2.54*** (.49)	-.75 (1.67)	.77 (2.79)	9.67 (12.44)	-.346	-.386
Average wages during quarters employed - OLS	-$560 (354)	-922 (745)	1508 (2574)	-4882 (4286)	3477 (16832)	-489	-184
Average wages during quarters employed - BCG	-834 (741)	-311 (316)	-13 (1225)	-2194 (1783)	4970 (8237)	-852	-67

EXHIBIT IV-16 (2)

	Voucher	Voucher Penetration	(Voucher* Voucher Penetration)	Certification Penetration	(Voucher* Certification Penetration)	Net effect at penetration means	
						Voucher	Displacement
White Females							
Average quarterly wages - OLS	-32 (116)	196 (188)	199 (487)	-11239*** (1891)	5180 (6458)	-27	-86
Average quarterly wages - BCG	-721* (404)	193 (187)	401 (498)	-9355*** (1805)	4145 (6443)	-658	-67
Average quarters employed - OLS	-.259 (.197)	-.781** (.318)	2.16*** (.83)	-18.3*** (3.2)	1.12 (11.0)	-.158	-.270
Average quarters employed - BCG	-2.04*** (.69)	-.79** (.32)	2.68*** (.85)	-11.5*** (3.06)	-1.48 (10.94)	-1.78	-.222
Average wages during - OLS quarters employed	-238 (229)	588 (355)	-211 (949)	-15242*** (3734)	20931* (11801)	-77	-75
Average wages during - BCG quarters employed	-116 (329)	388** (153)	-252 (408)	-8463*** (1470)	9143* (5250)	-47	-12
Black/Hispanic Females							
Average quarterly wages - OLS	-110 (117)	-301 (222)	569 (644)	-8509*** (2023)	5778 (4786)	-102	-123
Average quarterly wages - BCG	-1118*** (456)	-280 (222)	653 (643)	-7881*** (1989)	5767 (4788)	-278	-114
Average quarters employed - OLS	-.301 (.189)	-2.21*** (.38)	2.20** (1.04)	-3.48 (3.28)	8.78 (7.78)	-.252	-.347
Average quarters employed - BCG	-1.89** (.74)	-2.18*** (.38)	2.33** (1.04)	-2.43 (3.22)	8.72 (7.76)	-1.78	-.331
Average wages during - OLS quarters employed	-120 (223)	1087*** (402)	369 (1258)	-16122*** (3161)	1884 (9383)	-88	2
Average wages during - BCG quarters employed	-900** (408)	388** (198)	71 (573)	-7971*** (1771)	4415 (4261)	-870	-20

aDollar figures are in 1982 $.

bInitial estimate of corrected regression variance is negative. Greene's (1981) correction used instead.

*Significant at the .10 level
**Significant at the .05 level
***Significant at the .01 level

EXHIBIT IV-17

Employment and Training Administration

SAMPLE STATISTICS FOR HANDICAPPED VOUCHER STUDY--MALES

	Non-Vouchered		Vouchered	
	Mean	Std. Error	Mean	Std. Error
Total wages, 1980	$4302	79.65	$2592	158.22
Total wages, 1981	4974	87.21	2115	130.08
Total wages, 1982	3717	64.04	1858	100.09
Total wages, 1983	3798	69.50	2677	133.10
Total wages, 1984	4373	78.05	3432	165.79
No. qtrs. employed, 1980	1.59	.01843	1.32	.04833
No. qtrs. employed, 1981	2.01	.01952	1.42	.04856
No. qtrs. employed, 1982	1.81	.01906	1.67	.04311
No. qtrs. employed, 1983	1.72	.01992	1.79	.05099
No. qtrs. employed, 1984	1.79	.02003	1.86	.05234
Ave. qtrly. wages when employed, 1980	$2382	30.81	$1636	70.83
Ave. qtrly. wages when employed, 1981	2118	27.79	1237	52.41
Ave. qtrly. wages when employed, 1982	1782	22.16	965	35.98
Ave. qtrly. wages when employed, 1983	1877	24.25	1306	46.57
Ave. qtrly. wages when employed, 1984	2124	27.55	1574	56.07
Age	36.71	.1445	30.33	.3038
Education	11.63	.0340	11.55	.0694
Voucher penetration rate	.20624	.00156	.19296	.00409
Certification pen. rate	.02110	.00037	.02006	.00057
N	6880		961	

EXHIBIT IV-18

Employment and Training Administration

SAMPLE STATISTICS FOR HANDICAPPED VOUCHER STUDY--FEMALE

	Non-Vouchered		Vouchered	
	Mean	Std. Error	Mean	Std. Error
Total wages, 1980	$2667	77.63	$1921	188.49
Total wages, 1981	3003	87.43	1583	158.94
Total wages, 1982	2351	66.01	1630	144.10
Total wages, 1983	2631	72.47	2542	198.35
Total wages, 1984	3171	90.90	2889	237.51
No. qtrs. employed, 1980	1.46	.02836	1.43	.08441
No. qtrs. employed, 1981	1.79	.02948	1.39	.08175
No. qtrs. employed, 1982	1.62	.02890	1.69	.07767
No. qtrs. employed, 1983	1.68	.02991	1.92	.09160
No. qtrs. employed, 1984	1.83	.03029	1.89	.08993
Ave. qtrly. wages when employed, 1980	$1585	30.36	$1124	72.97
Ave. qtrly. wages when employed, 1981	1427	30.41	976	67.59
Ave. qtrly. wages when employed, 1982	1276	26.07	846	52.16
Ave. qtrly. wages when employed, 1983	1345	26.04	1150	62.66
Ave. qtrly. wages when employed, 1984	1532	37.62	1309	82.71
Age	37.74	.2161	31.49	.5423
Education	11.25	.0457	11.65	.1127
Voucher penetration rate	.19086	.00224	.20467	.00727
Certification pen. rate	.01959	.00058	.02300	.00100
N	3082		323	

EXHIBIT IV-19

Employment and Training Administration

HANDICAPPED VOUCHER IMPACTS WITHOUT PENETRATION RATE EFFECTSa

(Standard errors in parentheses)

	MALE			FEMALE		
	OLS	BCG		OLS	BCG	
	Voucher Coefficient	Voucher Coefficient	λ	Voucher Coefficient	Voucher Coefficient	λ
Change in average quarterly wages						
(83,84) vs. (80,81)	$192*** (56)	5895***b (391)	-3149*** (211)	$182*** (70)	2097*** (402)	-1047*** (211)
83 vs. (80,81)	162*** (58)	6349***b (400)	-3409*** (216)	186*** (70)	2231*** (403)	-1116*** (211)
84 vs. (80,81)	217*** (60)	5417***b (421)	-2876*** (227)	179** (81)	1963*** (467)	-980*** (245)
Change in average quarters employed						
(83,84) vs. (80,81)	.381*** (.063)	6.82*** (.44)	-3.57*** (.24)	.348*** (.111)	3.89*** (.64)	-1.95*** (.34)
83 vs. (80,81)	.37*** (.067)	6.85*** (.47)	-3.58*** (.25)	.372*** (.115)	4.06*** (.67)	-2.02*** (.35)
84 vs. (80,81)	.391*** (.068)	6.81*** (.48)	-3.56*** (.26)	.337*** (.122)	3.73*** (.71)	-1.88*** (.37)
Change in average wages during quarters employed						
(83,84) vs. (80,81)	$50 (97)	4456***b (314)	-2401*** (170)	$185* (112)	1174*** (333)	-568*** (175)
83 vs. (80,81)	58 (101)	4899***b (304)	-2649*** (164)	203* (118)	1216*** (291)	-591*** (153)
84 vs. (80,81)	52 (105)	2955***b (315)	-1591*** (170)	182 (132)	588* (340)	-268 (178)

aDollar figures are in 1982 $.

bInitial estimate of corrected regression variance is negative. Greene's (1981) correction used instead.

*Significant at the .10 level
**Significant at the .05 level
***Significant at the .01 level

range of $700 to $800 greater income growth per year for voucherees and four to five more weeks of employment per year. Selectivity regression results show a negative covariance between vouchering likelihood and earnings growth, resulting in even larger direct voucher effects. This evidence of improvement due to TJTC activity is the strongest of all groups, but may be marred by a data problem. It was impossible to determine whether a handicapped person visiting the ES was also undergoing vocational rehabilitation (as is necessary for TJTC eligibility), so this effect may be due all or in part to a greater amount of vocational rehabilitation received by voucherees.

The certification penetration rate effects shown in Exhibit IV-20 are consistently negative for non-voucherees, but net displacement effects are mostly positive because of the generally positive coefficients for the voucher rate. Hence, while certification may cut down on the residual number of jobs available, general ES activity on behalf of the non-voucherees makes up for that loss. The voucher rate effect for voucherees, however, is often negative, possibly indicating decreasing returns to the handicapped for general increases in vouchering activity.

In sum, the impact of vouchering appears to be significantly positive for all youth except white males and for both handicapped groups, particularly in improving employment outcomes. Employment but no earnings outcomes are also improved for white male youth and white veterans. For the other groups, the effect of vouchering on these outcomes is estimated to be insignificantly different from zero. For almost all groups but the handicapped, TJTC vouchering results in lower employed-quarter wages. Penetration rate effects vary among groups, in some cases suggesting increasing returns to vouchering, although this result is not consistent enough to justify much confidence about such a conclusion. There is also some evidence of displacement of non-voucherees by certifications, but mostly for groups other than

EXHIBIT IV-20

Employment and Training Administration

HANDICAPPED VOUCHER IMPACTS WITH PENETRATION RATE EFFECTS[a]

(Standard errors in parentheses)

	Voucher	Voucher Penetration	(Voucher* Voucher Penetration)	Certification Penetration	(Voucher* Certification Penetration)	Net effect at penetration means	
						Voucher	Displacement
Males							
Average quarterly wages - OLS	321*** (100)	909*** (172)	-297 (545)	-3378*** (712)	-2859 (3805)	314	116
Average quarterly wages - BCG	6241***[b] (416)	1026*** (169)	-1128** (543)	-958 (665)	-4613 (3771)	6109	191
Average quarters employed - OLS	.512 (.113)	1.75*** (.194)	-.354 (.615)	-3.51*** (.80)	-1.89 (4.29)	.673	.287
Average quarters employed - BCG	7.00*** (.47)	1.90*** (.19)	-1.32** (.61)	-.77 (.75)	-3.55 (4.26)	7.03	.374
Average wages during - OLS quarters employed	183 (184)	-246 (363)	-104 (1079)	-1992* (1127)	-5135 (6888)	-28	-93
Average wages during - BCG quarters employed	4886***[b] (335)	97 (136)	-841 (438)	-649 (536)	-4094 (3041)	4648	6
Females							
Average quarterly wages - OLS	315** (127)	476** (194)	-1002 (679)	-2957*** (747)	3179 (4797)	212	33
Average quarterly wages - BCG	2564*** (468)	848*** (185)	-1624** (685)	-1491** (713)	-39 (4850)	2368	132
Average quarters employed - OLS	.541*** (.202)	1.50*** (.31)	-2.45** (1.08)	-3.98*** (1.18)	12.68* (7.61)	.547	.208
Average quarters employed - BCG	4.28*** (.74)	2.21*** (.29)	-3.54*** (1.09)	-1.20 (1.13)	7.38 (7.71)	4.14	.398
Average wages during - OLS quarters employed	304 (210)	82 (372)	-312 (1170)	-2439* (1251)	-1863 (7900)	158	-32
Average wages during - BCG quarters employed	1532*** (388)	-35 (153)	-214 (569)	-1053* (592)	-3701 (4027)	1371	-27

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[a] Dollar figures are in 1982 $.

[b] Initial estimate of corrected regression variance is negative. Greene's (1981) correction used instead.

*Significant at the .10 level
**Significant at the .05 level
***Significant at the .01 level

youth. The selectivity regression results found evidence of both positive and negative selection of eligibles for vouchering, in patterns by group that makes some sense. However, the direct voucher effects estimated in these regressions are generally too large to be realistic.

2. THE IMPACT OF TJTC CERTIFICATION

The third and final treatment examined was that of having been certified. The comparison group was comprised of disadvantaged individuals who encountered the Employment Service in FY82, were not certified, and who began a new job afterwards. The outcomes analyzed included the same as those investigated in the vouchering study plus an additional outcome to get at the issue of job turnover. The latter outcome was the difference in the average number of quarters worked per employer before and after the treatment. Here the treatment date was the employment start date. As with the vouchering study, the models estimated were the same in all target groups; one model used a certification dummy variable as an explanatory factor in addition to controls, while the second included that treatment dummy plus voucher and certification penetration rates and interactions between the treatment dummy and voucher and certification penetration rates. The controls were identical to those used in the vouchering study and thus included Job Service referral data. Only OLS regressions were run. Since certification is beyond the control of the government agency and depends on the behavior of the employer who hired the individual, it was not necessary to run selectivity-corrected regressions.

The basic sample statistics for the youth target group are presented in Exhibits IV-21 through IV-24. For white males, the growth in mean total wages over the 5 years of data is approximately the same in absolute terms for certified and noncertified workers. The means for the noncertified group are higher except

EXHIBIT IV-21

Employment and Training Administration

SAMPLE STATISTICS FOR YOUTH CERTIFICATION STUDY—WHITE MALES

	Certified		Non-certified	
	Mean	Standard Error	Mean	Standard Error
Total wages, 1980	$1332	103.13	$1607	47.85
Total wages, 1981	1883	113.59	2181	50.74
Total wages, 1982	2418	93.68	2584	43.60
Total wages, 1983	3713	153.79	3346	63.40
Total wages, 1984	3799	173.67	4141	77.54
No. qtrs. employed, 1980	1.08	.05088	1.12	.02247
No. qtrs. employed, 1981	1.64	.06464	1.74	.02344
No. qtrs. employed, 1982	2.43	.05072	2.33	.01804
No. qtrs. employed, 1983	2.50	.06154	2.14	.02426
No. qtrs. employed, 1984	2.15	.06387	2.16	.02571
Ave. qtrly. wages when employed, 1980	$1057	50.80	$1262	24.58
Ave. qtrly. wages when employed, 1981	1041	42.00	1083	17.59
Ave. qtrly. wages when employed, 1982	921	26.19	969	12.45
Ave. qtrly. wages when employed, 1983	1316	39.41	1362	18.51
Ave. qtrly. wages when employed, 1984	1592	51.93	1702	22.89
Average quarters per employer - PRE	1.91	.06992	1.24	.01664
Average quarters per employer - POST	2.16	.06898	2.45	.02711
Voucher penetration rate	.2608	.00579	.1201	.00141
Certification penetration rate	.0273	.00070	.0174	.00020
N	603		4320	

EXHIBIT IV-22

Employment and Training Administration

SAMPLE STATISTICS FOR YOUTH CERTIFICATION STUDY—NONWHITE MALES

	Certified		Non-certified	
	Mean	Standard Error	Mean	Standard Error
Total wages, 1980	$1092	88.83	$1508	63.73
Total wages, 1981	2087	137.55	1915	65.75
Total wages, 1982	2360	97.83	2261	54.40
Total wages, 1983	3389	148.58	2881	79.40
Total wages, 1984	3598	157.94	3573	91.74
No. qtrs. employed, 1980	.95	.04868	1.11	.02919
No. qtrs. employed, 1981	1.73	.06818	1.68	.03077
No. qtrs. employed, 1982	2.51	.04977	2.29	.02461
No. qtrs. employed, 1983	2.51	.06498	2.03	.03349
No. qtrs. employed, 1984	2.33	.06354	2.18	.03346
Ave. qtrly. wages when employed, 1980	$1026	52.16	$1151	32.59
Ave. qtrly. wages when employed, 1981	1039	46.36	961	23.85
Ave. qtrly. wages when employed, 1982	836	25.23	841	15.87
Ave. qtrly. wages when employed, 1983	1205	38.91	1210	23.65
Ave. qtrly. wages when employed, 1984	1407	45.23	1429	27.27
Average qtrs. per employer - PRE	1.71	.06860	1.17	.01964
Average qtrs. per employer - POST	2.03	.06530	2.18	.03157
Voucher penetration rate	.26164	.00602	.15252	.00225
Certification penetration rate	.02619	.00100	.01609	.00033
N	540		2352	

EXHIBIT IV-23

Employment and Training Administration

SAMPLE STATISTICS FOR YOUTH CERTIFICATION STUDY--WHITE FEMALES

	Certified		Non-certified	
	Mean	Standard Error	Mean	Standard Error
Total wages, 1980	$ 980	84.98	$1105	49.14
Total wages, 1981	1631	114.40	1652	42.95
Total wages, 1982	1971	84.54	2079	38.20
Total wages, 1983	2909	137.17	2700	61.37
Total wages, 1984	3205	152.64	3135	65.46
No. qtrs. employed, 1980	.97	.05213	1.07	.02533
No. qtrs. employed, 1981	1.69	.06950	1.77	.02690
No. qtrs. employed, 1982	2.46	.05287	2.39	.02035
No. qtrs. employed, 1983	2.41	.06832	2.18	.02813
No. qtrs. employed, 1984	2.16	.06747	2.13	.02929
Ave. qtrly. wages when employed, 1980	$ 881	48.52	$ 917	28.59
Ave. qtrly. wages when employed, 1981	839	41.55	815	14.51
Ave. qtrly. wages when employed, 1982	721	24.41	771	11.09
Ave. qtrly. wages when employed, 1983	1088	37.74	1082	17.81
Ave. qtrly. wages when employed, 1984	1337	45.81	1307	19.27
Ave. qtrs. per employer - PRE	1.79	.06696	1.23	.01834
Ave. qtrs. per employer - POST	2.11	.06484	2.47	.03011
Voucher penetration rate	.2766	.00638	.11645	.00167
Certification penetration rate	.0284	.00076	.01789	.00023
N	533		3277	

EXHIBIT IV-24

Employment and Training Administration

SAMPLE STATISTICS FOR YOUTH CERTIFICATION STUDY--NONWHITE FEMALES

	Certified		Noncertified	
	Mean	Standard Error	Mean	Standard Error
Total wages, 1980	$ 875	93.66	$ 958	47.48
Total wages, 1981	1383	108.10	1493	55.43
Total wages, 1982	2067	95.86	2032	51.28
Total wages, 1983	3080	151.27	2463	70.29
Total wages, 1984	2932	145.94	3044	80.78
No. qtrs. employed, 1980	.86	.04973	.87	.02764
No. qtrs. employed, 1981	1.55	.07126	1.55	.03187
No. qtrs. employed, 1982	2.44	.05624	2.28	.02530
No. qtrs. employed, 1983	2.53	.07136	1.98	.03460
No. qtrs. employed, 1984	2.18	.06862	2.13	.02505
Ave. qtrly. wages when employed, 1980	$ 846	51.44	$ 910	27.99
Ave. qtrly. wages when employed, 1981	760	40.82	809	20.32
Ave. qtrly. wages when employed, 1982	751	26.22	754	14.71
Ave. qtrly. wages when employed, 1983	1094	39.72	1059	20.88
Ave. qtrly. wages when employed, 1984	1239	46.69	1251	24.33
Ave. qtrs. per employer - PRE	1.85	.07160	1.21	.02370
Ave. qtrs. per employer - POST	2.35	.08404	2.43	.03840
Voucher penetration rate	.27758	.00691	.13862	.00233
Certification penetration rate	.02875	.00113	.01487	.00031
N	459		2196	

in 1983, when the mean for the certified group showed exceptional growth. Part of the difference in 1983 is explained by levels of employment--the average quarters of employment in 1983 is significantly higher for the treatment group than for the comparison group, while the two are comparable for all other years. Both groups have the declines in average quarterly wages when employed that have been consistently showing up for all studies. The decline and recovery are greater for non-certified individuals. A very similar descriptive picture is painted for nonwhite male youth, although the mean earnings for the certified group are higher in every year except 1980. Quarters of employment are greater for both 1982 and 1983.

Examining the statistics for the two female groups, we find much smaller differences in wages and quarters of employment between the treatment and comparison groups than for males. As would be expected, the level of wages are lower for females than males. Both white and nonwhite female treatment groups have much larger mean wage growth in 1983 than their noncertified counterparts. Again, this difference is explained by employment levels and not wages during employment.

The regression results for the youth groups are provided in Exhibits IV-25 and IV-26. The former provides the coefficient estimates for all outcomes for the model using just the treatment dummy. The second exhibit provides the coefficients for the treatment dummy, the penetration rate variables, and the treatment and penetration rate interaction terms as well as calculating the net effects for the outcomes determined by averaging 83 and 84 and differencing out the pre-treatment years averages.

In Exhibit IV-25, it can be observed that the certification impacts are typically positive and significant. White males and females exhibit positive average wage, quarters of employment, and average wages during employment impacts, with the female

EXHIBIT IV-25

Employment and Training Administration

YOUTH CERTIFICATION IMPACTS
WITHOUT PENETRATION RATE EFFECTSa
[Standard errors in parentheses]

	White Males	Nonwhite Males	White Females	Nonwhite Females
Change in average quarterly wages				
[83,84] vs. [80,82]	$211*** [77]	95 [76]	183*** [69]	152* [79]
83 vs. [80,81]	303*** [77]	178** [78]	141* [74]	234*** [81]
84 vs. [80,81]	119** [89]	12 [85]	234*** [79]	68 [90]
Change in average quarters employed				
[83, 84] vs. [80, 81]	.42*** [.12]	.31*** [.13]	.20 [.13]	-.00 [.16]
83 vs. [80, 81]	.59*** [.13]	.43*** [.14]	.15 [.14]	.13 [.17]
84 vs. [80, 81]	.30** [.13]	.20 [.13]	.30** [.15]	-.13 [.17]
Change in average wages during quarters employed				
[83, 84] vs. 80, 81]	54 [101]	-90 [117]	258** [103]	344** [125]
83 vs. [80, 81]	148 [104]	-46 [120]	213* [113]	472*** [125]
84 vs [80, 81]	-20 [118]	-137 [130]	310*** [111]	241* [142]
Change in number of quarters worked per employer				
	-.67*** [.14]	-.53*** [.16]	-.55*** [.17]	-.17 [26]

aDollar figures are in 1982 $.

*significant at the .10 level
**significant at the .05 level
***significant at the .01 level

EXHIBIT IV-26 (1)

Employment and Training Administration

YOUTH CERTIFICATION IMPACTS WITH PENETRATION RATE EFFECTS[a]

(Standard errors in parentheses)

	Certification	Voucher Penetration	Certification* Voucher Penetration	Certification Penetration	Certification* Certification Penetration	Net effects at penetration rate means	
						Certification	Displacement
White Males							
Average quarterly wage	314** (128)	-659*** (238)	1190** (500)	-1294 (1688)	-12404 (3908)	79	-102
Average quarters employed	-.10 (.20)	-2.39*** (37)	4.41*** (.78)	-2.19 (2.63)	-18.98*** (6.09)	-.15	-.33
Average Wages During quarters employed	555*** (184)	158 (337)	550 (845)	-1680 (2427)	-15146** (6557)	198	-48
Change in number of quarters worked per employer	-.34 (.28)	-1.34* (.71)	1.84 (1.28)	-3.06 (4.31)	-18.74** (9.31)	-.80	-.21
Nonwhite Males							
Average quarterly wage	129 (134)	-843*** (318)	-34 (700)	3098 (2003)	-1540 (4283)	-59	-78
Average quarters employed	.17 (.22)	-2.88*** (.52)	1.64 (1.15)	9.26*** (3.28)	-11.00 (7.02)	-.20	-.29
Average wages during quarters employed	253 (221)	-58 (498)	-1757 (1231)	-555 (3118)	8430 (7307)	-16	-18
Change in number of quarters worked per employer	-.15 (.33)	-.88 (1.04)	-.31 (1.78)	-3.10 (5.06)	-2.84 (10.11)	-.58	-.15

EXHIBIT IV-26 (2)

	Certification	Voucher Penetration	Certification* Voucher Penetration	Certification Penetratiom	Certification* Certification Penetration	Net effects at penetration rate means	
						Certification	Displacement
White Females							
Average quarterly wage	336*** (110)	-546*** (211)	403 (425)	1162 (1537)	-6662** (3313)	140	-43
Average quarters employed	-.12 (.21)	-3.29*** (.41)	3.96*** (.82)	-.04 (2.95)	-16.57*** (6.36)	-.41	-.38
Average wages during quarters employed	710*** (180)	544 (358)	-2168** (854)	-618 (2538)	4932** (6587)	383	52
Change in number of quarters worked per employer	-.03 (.36)	-1.22 (.88)	-1.47 (1.48)	6.40 (5.89)	-9.16 (11.30)	-.85	-.03
Nonwhite Females							
Average quarterly wage	337*** (124)	-106 (258)	245 (668)	571 (1749)	-6962* (4231)	192	-6
Average quarters employed	.13 (.25)	-1.73*** (.51)	-.43 (1.32)	3.15 (3.48)	.81 (8.41)	-.36	-.19
Average wages during quarters employed	662*** (195)	73 (413)	365 (1046)	495 (2701)	-10494 (6571)	456	-3
Changes in number of quarters worked per employer	.08 (.48)	.25 (1.44)	-.79 (2.39)	-21.60*** (7.63)	10.22 (14.44)	-.40	-.29

[a] Dollar figures are in 1982 $.

*Significant at the .10 level
**Significant at the .05 level
***Significant at the .01 level

impacts particularly large. For nonwhite males, the change in average wages conditional on employment are negative, although not significant. Combined with the positive employment and overall wage impacts, these results suggest that the increased employment of nonwhite males who have been certified occurs in much lower wage jobs. On the other hand, for nonwhite females, the change in average quarters of employment impacts are essentially zero, but the average wage and average wage during employment impacts are very large and significant. Certified individuals are not working any more quarters than noncertified individuals, but are finding jobs that pay $300-$400 more per quarter on average.

The turnover impacts for certified workers in all race/sex groups are large and significant. For males and white females, the certified groups average retention is about a half of a quarter shorter than for the comparison groups. For nonwhite females, the impacts are on the order of .25 quarters, but this is not significant.

All in all, it appears from the results in Exhibit IV-25 as if certification results in more quarters of employment for males. The average wages while employed are slightly higher for certified white males than for noncertified white males, but are lower for certified black and Hispanic males vis-a-vis the noncertified comparison group. The combination of the two effects result in higher average quarterly wages for the targeted group. For female youth, the positive effect of certification seems to arise in wages received, although white females do have slightly positive quarters of employment impacts.

The same basic story holds true for the net impacts shown in Exhibit IV-26. The two female groups exhibit large average wage impacts despite negative quarters of employment impacts. White males show a similar pattern, although the magnitude of the net effects is smaller than for either female group. Nonwhite males have uniformly small but negative wage and employment impacts.

Interestingly, eleven of the 12 displacement estimates are negative, suggesting that to some extent, the certified workers are displacing individuals from within the comparison group.

Exhibits IV-27 through IV-30 provide the sample statistics for the welfare target group. The sample sizes for the certified group are quite small relative to the comparison group which reflects the low certification rates for that target group. For white males, the certified group tends to have lower earnings levels and quarters of employment. As with the youth target group, the 1983 earnings recovery is large and is based on more employment (an average of 2.35 quarters for the certified males compared to 1.96 for the comparison group). Certified nonwhite males in the welfare target group have significantly lower average wages in the earliest 3 years of the time series because of lower wages and less employment. In the latter 2 years, the employment picks up and wages recover to a larger extent than for noncertified workers, so that average earnings in 1983 and 1984 are comparable for the two groups. A very similar pattern occurs for both white and nonwhite females. Wages are relatively low for certified women in 1980 and 1981 because of less employment and lower wages, but by 1983, earnings and employment of the certified group exceeded those of the noncertified. This trend leads us to predict that TJTC had a positive impact for women in the welfare target group for both wage and employment outcomes.

The regression results for this target group are displayed in Exhibits IV-31 and IV-32. The coefficients in the first table indicate large positive total wage and employment effects for all race/sex groups. For both nonwhite males and females, however, the wage impacts for employed quarters only are negative indicating that certified individuals in these groups tend to get lower

EXHIBIT IV-27

Employment and Training Administration

SAMPLE STATISTICS FOR WELFARE CERTIFICATION STUDY--WHITE MALES

	Certified		Non-certified	
	Mean	Standard Error	Mean	Standard Error
Total wages, 1980	$2447	470.17	$3146	104.72
Total wages, 1981	1891	388.38	3043	95.81
Total wages, 1982	2308	271.87	3407	95.27
Total wages, 1983	3640	435.90	4103	119.67
Total wages, 1984	4269	637.06	4808	134.79
No. qtrs. employed, 1980	1.30	.17007	1.51	.03175
No. qtrs. employed, 1981	1.43	.16666	1.73	.02985
No. qtrs. employed, 1982	2.15	.13324	2.20	.02497
No. qtrs. employed, 1983	2.35	.18063	1.96	.03291
No. qtrs. employed, 1984	2.19	.17619	2.04	.03411
Ave. qtrly. wages when employed, 1980	$1655	188.35	$1816	41.69
Ave. qtrly. wages when employed, 1981	1109	157.86	1491	33.33
Ave. qtrly. wages when employed, 1982	946	83.28	1281	26.84
Ave. qtrly. wages when employed, 1983	1390	113.87	1806	40.22
Ave. qtrly. wages when employed, 1984	1635	187.50	2061	42.71
Ave. qtrs. per employer - PRE	1.88	.18132	1.21	.01634
Ave. qtrs. per employer - POST	2.11	.20715	2.43	.03973
Voucher penetration rate	.1423	.00853	.1505	.00156
Certification penetration rate	.0109	.00096	.0125	.00029
N	80		2431	

EXHIBIT IV-28

Employment and Training Administration

SAMPLE STATISTICS FOR WELFARE CERTIFICATION STUDY--NONWHITE MALES

	Certified		Non-certified	
	Mean	Standard Error	Mean	Standard Error
Total wages, 1980	$1731	489.54	$2740	122.35
Total wages, 1981	1709	506.46	2427	109.69
Total wages, 1982	1504	296.49	2695	99.29
Total wages, 1983	2965	503.19	2915	119.42
Total wages, 1984	3305	512.15	3655	141.21
No. qtrs. employed, 1980	1.26	.16068	1.44	.03966
No. qtrs. employed, 1981	1.25	.15916	1.63	.03734
No. qtrs. employed, 1982	1.92	.11660	2.16	.03181
No. qtrs. employed, 1983	2.11	.19835	1.79	.04202
No. qtrs. employed, 1984	2.07	.20008	1.89	.04279
Ave. qtrly. wages when employed, 1980	$1132	210.58	$1600	48.15
Ave. qtrly. wages when employed, 1981	1145	227.81	1230	39.89
Ave. qtrly. wages when employed, 1982	686	92.49	1044	29.34
Ave. qtrly. wages when employed, 1983	1184	152.68	1402	42.44
Ave. qtrly. wages when employed, 1984	1377	154.77	1678	47.42
Ave. qtrs. per employer - PRE	1.68	.18417	1.17	.01997
Ave. qtrs. per employer - POST	2.51	.26602	2.20	.04282
Voucher penetration rate	.1500	.00718	.1526	.00179
Certification penetration rate	.0108	.00110	.0109	.00038
N	72		1472	

EXHIBIT IV-29

Employment and Training Administration

SAMPLE STATISTICS FOR WELFARE CERTIFICATION STUDY--WHITE FEMALES

	Certified		Non-certified	
	Mean	Standard Error	Mean	Standard Error
Total wages, 1980	$1824	325.52	$1939	72.06
Total wages, 1981	1853	362.57	2139	69.91
Total wages, 1982	1729	347.04	2408	65.59
Total wages, 1983	3301	393.03	2800	85.58
Total wages, 1984	3848	412.55	3341	99.01
No. qtrs. employed, 1980	1.27	.16141	1.32	.03257
No. qtrs. employed, 1981	1.50	.17257	1.70	.03168
No. qtrs. employed, 1982	1.93	.12393	2.23	.02550
No. qtrs. employed, 1983	2.35	.17184	1.91	.03413
No. qtrs. employed, 1984	2.43	.17317	1.97	.03535
Ave. qtrly. wages when employed, 1980	$1199	129.26	$1278	31.43
Ave. qtrly. wages when employed, 1981	986	139.47	1054	24.73
Ave. qtrly. wages when employed, 1982	735	100.46	902	19.07
Ave. qtrly. wages when employed, 1983	1189	108.56	1246	27.91
Ave. qtrly. wages when employed, 1984	1430	125.36	1481	32.54
Ave. qtrs. per employer - PRE	1.78	.21116	1.244	.01958
Ave. qtrs. per employer - POST	2.98	.28167	2.47	.03862
Voucher penetration rate	.2002	.01399	.1430	.00194
Certification penetration rate	.0143	.00098	.0111	.00022
N	88		2309	

EXHIBIT IV-30

Employment and Training Administration

SAMPLE STATISTICS FOR WELFARE CERTIFICATION STUDY--NONWHITE FEMALES

	Certified		Non-certified	
	Mean	Standard Error	Mean	Standard Error
Total wages, 1980	$1620	362.03	$1909	86.85
Total wages, 1981	1447	379.88	2340	90.06
Total wages, 1982	2068	290.61	2557	90.13
Total wages, 1983	3360	371.47	2953	107.87
Total wages, 1984	3226	502.13	3550	125.87
No. qtrs. employed, 1980	1.14	.16250	1.20	.03513
No. qtrs. employed, 1981	1.31	.17627	1.69	.03602
No. qtrs. employed, 1982	2.24	.13443	2.18	.02953
No. qtrs. employed, 1983	2.64	.17056	1.89	.03911
No. qtrs. employed, 1984	2.20	.18252	2.04	.03898
Ave. qtrly. wages when employed, 1980	$1237	173.03	$1345	39.69
Ave. qtrly. wages when employed, 1981	848	161.30	1153	31.95
Ave. qtrly. wages when employed, 1982	795	84.77	942	25.32
Ave. qtrly. wages when employed, 1983	1174	90.06	1315	35.43
Ave. qtrly. wages when employed, 1984	1222	141.73	1472	39.93
Ave. qtrs. per employer - PRE	1.91	.18696	1.18	.01962
Ave. qtrs. per employer - POST	3.15	.28030	2.69	.05133
Voucher penetration rate	.1753	.01296	.1428	.00213
Certification penetration rate	.0121	.00138	.0104	.00027
N	74		1802	

EXHIBIT IV-31

Employment and Training Administration

WELFARE CERTIFICATION IMPACTS WITHOUT PENETRATION RATE EFFECTS[a]

(Standard errors in parentheses)

	White Males	Nonwhite Males	White Females	Nonwhite Females
Change in average quarterly wages				
(83,84) vs. (80,82)	593*** (230)	556** (267)	770*** (175)	751*** (255)
83 vs. (80,81)	595*** (236)	615** (273)	795*** (177)	791*** (253)
84 vs. (80,81)	599** (257)	522* (299)	744*** (195)	710** (285)
Change in average quarters employed				
(83, 84) vs. (80, 81)	1.14*** (.28)	1.25*** (.36)	1.46*** (.29)	1.81*** (.39)
83 vs. (80, 81)	1.32*** (.30)	1.39*** (.40)	1.49*** (.31)	2.05*** (.42)
84 vs. (80, 81)	.97*** (.30)	1.17*** (.40)	1.42*** (.32)	1.55*** (.42)
Change in average wages during quarters employed				
(83, 84) vs. 80, 81)	320 (343)	-132 (392)	880*** (259)	-214 (390)
83 vs. (80, 81)	152 (373)	-248 (410)	849*** (271)	102 (394)
84 vs (80, 81)	446 (373)	-183 (438)	543* (286)	-539 (431)
Change in number of quarters worked per employer	-.29 (.30)	.15 (.39)	.18 (.36)	.49 (.58)

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[a] Dollar figures are in 1982 $.

*significant at the .10 level
**significant at the .05 level
***significant at the .01 level

EXHIBIT IV-32(1)

Employment and Training Administration

WELFARE CERTIFICATION IMPACTS WITH PENETRATION RATE EFFECTS[a]

(Standard errors in parentheses)

	Certification	Voucher Penetration	Certification *Voucher Penetration	Certification Penetration	Certification* Certification Penetration	Net effects at penetration means	
						Certification	Displacement
White Males							
Average quarterly wage	478 (397)	112 (412)	1222 (2213)	-1122 (2292)	-4935 (21650)	602	3
Average quarters employed	1.07** (.48)	.50 (.49)	1.24 (2.66)	-2.53 (2.75)	-8.73 (25.99)	1.19	.04
Average wages during quarters employed	348 (611)	-535 (648)	-1348 (4370)	2745 (3066)	12009 (35229)	241	-46
Changes in number of quarters worked per employer	-1.00 (.55)	-.59 (.72)	2.01 (4.09)	1.68 (3.16)	38.89 (31.47)	-.38	-.07
Nonwhite Males							
Average quarterly wage	803* (445)	-1457*** (535)	-1909 (2987)	349 (2535)	-2132 (19275)	279	-219
Average quarters employed	1.92*** (.60)	-2.92* (.72)	-5.14 (4.03)	5.83* (3.42)	-1.90 (26.00)	.75	-.38
Average wages during quarters employed	247 (764)	-1225 (867)	-2953 (5518)	-3373 (4505)	-2604 (32369)	-444	-224
Change in number of quarters worked per employer	.22 (.69)	-2.41** (1.03)	.99 (4.54)	-4.28 (7.13)	-25.39 (30.73)	-.31	-.41

EXHIBIT IV-32 (2)

	Certification	Voucher Penetration	Certification *Voucher Penetration	Certification Penetration	Certification* Certification Penetration	Net effects at penetration means	
						Certification	Displacement
White Females							
Average quarterly wage	557** (264)	333 (251)	1373 (1007)	-9439 (2360)	-1691 (14358)	739	-57
Average quarters employed	.96** (.44)	-.91** (.42)	4.40*** (1.70)	-10.91*** (3.97)	-18.81 (24.18)	1.23	-.25
Average wages during quarters employed	252 (446)	762* (425)	1743 (1889)	-12313*** (4524)	9552 (20281)	714	-28
Change in number of quarters worked per employer	.36 (.60)	-.01 (.80)	1.45 (2.63)	-4.92 (5.41)	-26.79 (30.17)	.19	-.06
Nonwhite Females							
Average quarterly wage	793** (348)	94 (332)	-8 (1515)	-7362*** (2770)	-1935 (14309)	696	-63
Average quarters employed	1.39*** (.53)	-2.06*** (.50)	3.22 (2.29)	.99 (4.20)	-7.26 (21.67)	1.52	-.28
Average wages during quarters employed	284 (566)	1405*** (515)	-4012 (3226)	-15347*** (3740)	16184 (23006)	-163	41
Change in number of quarters per employer	.29 (.84)	.83 (1.43)	2.39 (4.33)	-13.77 (9.29)	-17.51 (32.87)	.48	-.02

[a] Dollar figures are in 1982 $.

*Significant at the .10 level
**Significant at the .05 level
***Significant at the .01 level

paying jobs than their nonwhite, noncertified counterparts. When we add in the penetration rate effects as shown in Exhibit IV-32, the story remains unchanged. White males and females receive strong positive effects on employment and wages because of TJTC, while nonwhites increase their quarters of employment, but have lower wages conditional on employment.

TJTC does seem to result in a reduction of turnover for this target group, at least for females. The coefficients in Exhibit IV-31 imply that certified nonwhite females work almost half a quarter per employer more relative to the years prior to being certified than their noncertified comparison group. The coefficient in Exhibit IV-31 is about .20 for whites, although it is not statistically significant. These effects hold up when penetration effects are netted in Exhibit IV-32. That exhibit, however, indicates that displacement may be a problem for this group, with the exception of white males.

A comparison of the sample statistics for the veterans target group shown in Exhibits IV-33 and IV-34 indicates that the certified groups--both whites and nonwhites--tend to have higher wages and more employment than the noncertified groups. The white certified veterans start the 5 year period with lower wages and less annual quarters of employment than the noncertified white veterans, but the difference is made up and surpassed over the 1982-83 time frame. Certified nonwhite veterans start with higher wages and employment and continue to maintain their advantage over the 5 years. They, however, exhibit large employment and average wage jumps in 1983.

The impact regression estimates (in Exhibit IV-35) show that whites have an increase in quarters of employment that holds over both 1983 and 1984, but the wages at these additional jobs are relatively low so that the wage during employment effects are negative (wages for noncertified workers grow faster than for

EXHIBIT IV-33

Employment and Training Administration

SAMPLE STATISTICS FOR VETERANS CERTIFICATION STUDY--WHITES

	Certified		Non-certified	
	Mean	Standard Error	Mean	Standard Error
Total wages, 1980	$2904	426.65	$3372	252.36
Total wages, 1981	3414	459.74	3456	236.44
Total wages, 1982	2979	238.73	3330	187.63
Total wages, 1983	4982	408.48	3684	224.45
Total wages, 1984	5469	510.91	4340	274.24
No. qtrs. employed, 1980	1.19	.13398	1.43	.07777
No. qtrs. employed, 1981	1.66	.14871	1.83	.07421
No. qtrs. employed, 1982	2.38	.11150	2.32	.05987
No. qtrs. employed, 1983	2.57	.13526	2.00	.07648
No. qtrs. employed, 1984	2.45	.14797	1.95	.08081
Ave. qtrly. wages when employed, 1980	$2196	201.36	$2102	98.55
Ave. qtrly. wages when employed, 1981	1815	157.16	1630	76.75
Ave. qtrly. wages when employed, 1982	1189	69.86	1214	50.20
Ave. qtrly. wages when employed, 1983	1781	105.05	1603	67.59
Ave. qtrly. wages when employed, 1984	1982	139.43	1988	86.93
Ave. qtrs. per employer - PRE	2.51	.23903	1.28	.05821
Ave. qtrs. per employer - POST	2.47	.16333	2.31	.08741
Voucher penetration rate	.2068	.01329	.1557	.00537
Certification penetration rate	.0238	.00138	.0194	.00067
N	121		423	

EXHIBIT IV-34

Employment and Training Administration

SAMPLE STATISTICS FOR VETERANS CERTIFICATION STUDY--NONWHITES

	Certified		Non-certified	
	Mean	Standard Error	Mean	Standard Error
Total wages, 1980	$2986	705.22	$2621	293.87
Total wages, 1981	3626	780.81	3416	324.57
Total wages, 1982	3636	839.59	2871	217.57
Total wages, 1983	5710	896.73	3576	322.22
Total wages, 1984	5497	869.85	4060	359.92
No. qtrs. employed, 1980	1.38	.16400	1.38	.09766
No. qtrs. employed, 1981	1.97	.18463	1.97	.10191
No. qtrs. employed, 1982	2.82	.12576	2.41	.07786
No. qtrs. employed, 1983	2.54	.18418	2.03	.11007
No. qtrs. employed, 1984	2.39	.18142	1.98	.11027
Ave. qtrly. wages when employed, 1980	$1819	269.29	$1642	116.30
Ave. qtrly. wages when employed, 1981	1614	269.02	1521	111.54
Ave. qtrly. wages when employed, 1982	1217	163.61	1074	81.62
Ave. qtrly. wages when employed, 1983	1914	241.28	1547	106.78
Ave. qtrly. wages when employed, 1984	2126	273.44	1807	116.09
Ave. qtrs. per employer - PRE	1.88	.25668	1.09	.05790
Ave. qtrs. per employer - POST	2.24	.21123	2.09	.10208
Voucher penetration rate	.2664	.01691	.1735	.00695
Certification penetration rate	.0267	.00257	.0173	.00107
N	69		217	

EXHIBIT IV-35

Employment and Training Administration

VETERANS CERTIFICATION IMPACTS WITHOUT PENETRATION RATE EFFECTS[a]

(Standard errors in parentheses)

	Whites	Nonwhites
Change in average quarterly wages		
(83, 84) vs. (80, 81)	$193 (180)	$258 (296)
83 vs. (80, 81)	172 (184)	375 (304)
84 vs. (80, 81)	230 (204)	155 (324)
Change in average quarters employed		
(83, 84) vs. (80, 81)	.51** (.24)	.29 (.35)
83 vs. (80, 81)	.47* (.25)	.26 (.39)
84 vs. (80, 81)	.57** (.26)	.31 (.38)
Change in average wages during quarters employed		
(83, 84) vs. (80, 81)	-$262 (266)	$120 (402)
83 vs. (80, 81)	-327 (279)	217 (397)
84 vs. (80, 81)	-204 (295)	82 (453)
Change in number of quarters worked per employer		
	-1.61*** (.32)	-.07 (.50)

[a] Dollar figures are in 1982 $.

*significant at the .10 level
**significant at the .05 level
***significant at the .01 level

certified workers). The total effect on average wages is positive, however. For nonwhites, all of the wage and employment impacts are positive, but none of them are significant. The turnover effects for both groups are negative with the average job retention of whites being about 1.50 quarters shorter.

The impacts calculated by using the penetration rate coefficients and interactions shown in Exhibit IV-36 are less sanguine for the veterans target group. The certified whites end up with negative earnings effects and the nonwhite effect is positive, but very small. Furthermore, the displacement effects are universally negative and sizeable suggesting within target group displacement.

The handicapped target group is the final group examined. Sample statistics are provided in Exhibits IV-37 and IV-38, while the regression results are in Exhibits IV-39 and IV-40. As was the case with the welfare target groups, the sample sizes for the certified treatment group are small relative to the noncertified comparison group, (less than 10% of the total for both males and females). For both sexes, it is clear that the certified group is at an economic disadvantage compared to the noncertified groups. Total wage averages and wages during quarters of employment are lower in all 5 years for both sexes. Furthermore, quarters of employment are lower for all years except for 1983. That exception plus the fact that in percentage terms the wage recovery after the 1982 trough for certified workers is greater than for noncertified workers suggests that TJTC has a positive influence on them.

Indeed, the regression results bear out this suggestion. All wage and employment impacts are positive. The impacts for males are all significant, but the limited sample size increases the variance around the results for females, so that only the quarters of employment impacts are significant. The net effects

EXHIBIT IV-36

Employment and Training Administration

VETERANS CERTIFICATION IMPACTS WITH PENETRATION RATE EFFECTS[a,b]

(Standard errors in parentheses)

	Certification	Voucher Penetration	Certification* Voucher Penetration	Certification Penetration	Certification* Certification Penetration	Net effects of penetration rate means	
						Certification	Displacement
Whites							
Average quarterly wage	99 (298)	-1036 (713)	1834 (1220)	-4632 (5983)	-7890 (10729)	-34	-251
Average quarters employed	.15 (.39)	-1.75* (.84)	2.65* (1.60)	-3.86 (7.84)	-2.20 (14.12)	.19	-.35
Average wages during quarters employed	-495 (451)	17 (1033)	2240 (2502)	-7777 (8869)	-4058 (19213)	-310	-148
Changes in number of quarters worked per employer	-1.08* (.58)	-4.01** (1.89)	1.98 (2.98)	9.81 (12.51)	-32.28* (21.74)	-2.11	-.43
Nonwhite Males							
Average quarterly wage	-387 (447)	-1228 (1333)	4187* (2332)	-1888 (8870)	-12790 (15257)	9	-248
Average quarters employed	-.68 (.53)	-4.00** (1.50)	6.21** (2.77)	22.81** (10.53)	-39.87** (18.11)	-.13	-.30
Average wages during quarters employed	-1083 (875)	18 (2081)	4784 (3754)	-15838 (13031)	9333 (24301)	22	-271
Change in number of quarters worked per employer	-.41 (.98)	-4.09 (3.92)	4.38 (5.09)	-1.58 (19.73)	23.23 (31.65)	-1.00	-.74

[a] Dollar figures are in 1982 $.

[b] All impacts are changes for (83, 84) vs. (80, 81).

*Significant at the .10 level
**Significant at the .05 level
***Significant at the .01 level

EXHIBIT IV-37

Employment and Training Administration

SAMPLE STATISTICS FOR HANDICAPPED CERTIFICATION STUDY--MALES

	Certified		Non-certified	
	Mean	Standard Error	Mean	Standard Error
Total wages, 1980	$2469	281.25	$4174	105.05
Total wages, 1981	1713	171.67	4714	109.49
Total wages, 1982	2252	188.07	4393	80.35
Total wages, 1983	3246	232.87	4610	85.92
Total wages, 1984	4030	314.48	4883	105.80
No. qtrs. employed, 1980	1.21	.08388	1.81	.02464
No. qtrs. employed, 1981	1.38	.08351	2.12	.02496
No. qtrs. employed, 1982	2.14	.06545	2.51	.01873
No. qtrs. employed, 1983	2.20	.08682	2.15	.02656
No. qtrs. employed, 1984	2.04	.09165	2.02	.02649
Ave. qtrly. wages when employed, 1980	$1730	148.94	$2280	39.61
Ave. qtrly. wages when employed, 1981	1087	73.59	1888	33.17
Ave. qtrly. wages when employed, 1982	931	49.34	1487	21.51
Ave. qtrly. wages when employed, 1983	1309	73.13	1861	28.44
Ave. qtrly. wages when employed, 1984	1678	98.28	2142	34.29
Ave. qtrs. per employer - PRE	1.93	.10769	1.20	.01727
Ave. qtrs. per employer - POST	2.24	.10850	2.82	.03329
Voucher penetration rate	.1931	.00716	.1935	.00186
Certification penetration rate	.0210	.00104	.0217	.00048
N	317		3817	

120

EXHIBIT IV-38

Employment and Training Administration

SAMPLE STATISTICS FOR HANDICAPPED CERTIFICATION STUDY—FEMALES

	Certified		Non-certified	
	Mean	Standard Error	Mean	Standard Error
Total wages, 1980	$1943	386.05	$2878	118.18
Total wages, 1981	1718	322.89	3077	115.39
Total wages, 1982	2156	262.97	3247	98.49
Total wages, 1983	3166	378.18	3434	115.55
Total wages, 1984	3238	469.50	3656	128.83
No. qtrs. employed, 1980	1.38	.15166	1.55	.04131
No. qtrs. employed, 1981	1.46	.14901	2.00	.04060
No. qtrs. employed, 1982	2.15	.11331	2.50	.03307
No. qtrs. employed, 1983	2.45	.15208	2.16	.04386
No. qtrs. employed, 1984	2.11	.15454	2.07	.04394
Ave. qtrly. wages when employed, 1980	$1215	169.47	$1628	44.85
Ave. qtrly. wages when employed, 1981	963	128.23	1315	37.18
Ave. qtrly. wages when employed, 1982	879	74.59	1108	27.96
Ave. qtrly. wages when employed, 1983	1152	108.21	1387	35.14
Ave. qtrly. wages when employed, 1984	1247	140.05	1585	44.43
Ave. qtrs. per employer - PRE	1.82	.13610	1.22	.02471
Ave. qtrs. per employer - POST	2.68	.23052	2.90	.05930
Voucher penetration rate	.2010	.01358	.1699	.00292
Certification penetration rate	.0223	.00179	.0195	.0081
N	104		1480	

EXHIBIT IV-39

Employment and Training Administration

VETERANS CERTIFICATION IMPACTS WITHOUT PENETRATION RATE EFFECTS

(Standard errors in parentheses)

	Males	Females
Change in average quarterly wages		
(83, 84) vs. (80, 81)	384*** (115)	204 (150)
83 vs. (80, 81)	333*** (120)	229 (160)
84 vs. (80, 81)	425*** (125)	177 (165)
Change in average quarters employed		
(83, 84) vs. (80, 81)	.57*** (.13)	.61** (.24)
83 vs. (80, 81)	.57*** (.14)	.79*** (.25)
84 vs. (80, 81)	.56*** (.14)	.42* (.25)
Change in average wages during quarters employed		
(83, 84) vs. (80, 81)	368** (179)	191 (222)
83 vs. (80, 81)	323* (182)	223 (234)
84 vs. (80, 81)	393** (197)	153 (268)
Change in number of quarters worked per employer		
	-.17 (24)	-.04 (47)

aDollar figures are in 1982 $.

*significant at the .10 level
**significant at the .05 level
***significant at the .01 level

EXHIBIT IV-40

Employment and Training Administration

HANDICAPPED CERTIFICATION IMPACTS WITH PENETRATION RATE EFFECTS[a]

(Standard errors in parentheses)

	Certification	Voucher Penetration	Certification* Voucher Penetration	Certification Penetration	Certification* Certification Penetration	Net effects at penetration rate means: Certification	Net effects at penetration rate means: Displacement
Males							
Average quarterly wages	437** (176)	-1330*** (272)	1023 (998)	321 (969)	-12230* (6745)	128	-250
Average quarters employed	.53*** (.20)	-1.76*** (.31)	.86 (1.12)	1.81* (1.09)	-7.45 (7.59)	.24	-.30
Average wages during quarters employed	496* (292)	-750* (415)	1257 (1774)	-643 (1373)	-15477 (11313)	255	-159
Change in number of quarters worked per employer	-.18 (.40)	-2.93*** (.80)	5.59** (2.31)	-1.28 (2.76)	-45.67*** (14.71)	-.65	-.59
Females							
Average quarterly wage	286 (229)	-614* (313)	-236 (1094)	-134 (1146)	-897 (8059)	92	-107
Average quarters employed	.39 (.36)	-2.03*** (.49)	.38 (1.71)	4.14** (1.79)	4.58 (12.59)	.25	-.26
Average wages during quarters employed	404 (368)	202 (477)	-304 (2110)	-2615 (1720)	-5554 (14092)	201	-17
Change in number of quarters worked per employer	-.57 (.77)	-2.70 (1.73)	7.73* (4.37)	-5.56 (7.50)	-37.87 (29.00)	-.53	-.57

[a] Dollar figures are in 1982 $.

*Significant at the .10 level
**Significant at the .05 level
***Significant at the .01 level

calculated at the mean penetration rate in Exhibit IV-40 yield the same results. As with the veterans target, displacement appears to occur for both males and females in the handicapped target group.

In summary, it appears as if certification leads to positive employment impacts and, with only a few exceptions, positive wage impacts. Unlike the vouchering study, however, these positive results are often accompanied by significant displacement of the comparison group by the certified group.

V. SUMMARY AND CONCLUSIONS

V. SUMMARY AND CONCLUSIONS

The previous chapter presented numerous estimates using different models and estimation strategies as it attempted to dissect the earnings and employment impacts of TJTC on various subgroups of the population. In this chapter, we try to summarize the results and draw conclusions for program administrators and policymakers. This summary will proceed along two dimensions. Results will be summarized by target group (youth, welfare, veterans, and handicapped) and by treatment (vouchering, certification).

Some general results stand out as follows:

- The most typical impact of TJTC is to increase quarters of employment but to have negative impacts on mean wages conditioned on employment relative to comparison groups. In other words, more vouchered or certified individuals become employed but wages are relatively lower than in the comparison group (nonvouchered eligibles or noncertified eligible job finders.)
- Of the target groups analyzed, only the handicapped group has consistently positive impacts for both treatments.
- Certified individuals tend to have more turnover after the treatment than noncertified job finders.
- The econometric technique used to correct for selectivity in the vouchering study suggests that the white males who are vouchered tend to be the least employable, while "creaming" is exhibited for white females and nonwhites.
- Certification results in within target group displacement for veterans and handicapped and male youth target groups.

All in all, the results appeared quite positive for TJTC. Voiuchering seemed to improve the changes of finding employment relative to target groupmembers who were not vouchered. Furthermore, this employment effect was large enough to offset a negative earnings during employment impact so that, on average, earnings were improved. Furthermore, certification tended to improve employment likelihoods and wages while employed. THese impacts are, of course, subject to data limitations and the assumptions underlying our specifications. Two important data limitations that we have pointed out include the possibility that TJTC may increase the share of an individual's earnings covered by UI (and have a smaller effect on total earnings) and nonrandom selection into the treatment groups may bias the results. We will expand on these results in the first part of this chapter and conclude with summary remarks for policymakers.

1. AN OVERVIEW OF RESULTS BY TARGET GROUP

In Exhibits V-1 through V-4, we provide a qualitative review of the results of the two impact studies for the four target groups. The rows in these tables represent the various race/sex subgroups examined while the columns represent the outcomes that were analyzed. The entries represent the sign of the effect. These entries are as follows:

+	statistically significant positive effect
+/o	positive effect but not statistically significant
0	effects very nearly zero
-/o	negative effect but not statistically significant
-	statistically significant negative effect

If an effect seems to be short-term, the entry is marked with a s in parentheses. Because different models were run to estimate various impacts, the entries in the table are qualitative or impressionistic rather than a rigorous attempt to aggregate across the models.

In examining the exhibits, it must be borne in mind that the impacts come from a change model and from comparing a treatment group to a comparison group. Thus a " -" does not necessarily mean a negative change, but rather means that the change in the treatment group is smaller than in the comparison group.

EXHIBIT V-1

Employment and Training Administration

SUMMARY OF IMPACTS FOR THE WELFARE TARGET GROUP

	Outcome				
	Avg. wages during employment	Avg. quarters of employment	Avg. wages	Avg. quarters per employer	Displacement
			VOUCHERING		
White Males[a]	-	+	+	NA	0
Nonwhite Males[a]	-	+	+/0	NA	-
White Females[a]	-	+	+	NA	+/0
Nonwhite Females[a]	0	+(s)	+(s)	NA	-/0
			CERTIFICATION		
White Males	+/0	+	+	-	-
Nonwhite Males	-/0	+(s)	+(s)	-	-/0
White Females	+	+/0	+	-	-/0
Nonwhite Females	+	0	+(s)	-/0	-/0

---

[a] The selectivity coefficients ( ) are negative for white males and positive for the other three groups.

EXHIBIT V-2

Employment and Training Administration

SUMMARY OF IMPACTS FOR THE WELFARE TARGET GROUP

	Outcome				
	Avg. wages during employment	Avg. quarters of employment	Avg. wages	Avg. quarters per employer	Displacement
			VOUCHERING		
White Males[a]	-/0	+/0	-/0	NA	+/0
Nonwhite Males[a]	-	+/0	-/0	NA	-
White Females[a]	0	-	-/0	NA	-
Nonwhite Females[a]	-[s]	-/0	-/0	NA	-/0
			CERTIFICATION		
White Males	+/0	+	+	-/0	0
Nonwhite Males	-/0	+	+	+/0	-
White Females	+	+	+	+/0	-/0
Nonwhite Females	-/0	+	+	+/0	-/0

[a] The selectivity coefficients [ ] are negative for white males and positive for the other three groups.

EXHIBIT V-3

Employment and Training Administration

SUMMARY OF IMPACTS FOR THE DISADVANTAGED VETERANS TARGET GROUP

Race/Sex	Outcome				
	Avg. wages during employment	Avg. quarters of employment	Avg. wages	Avg. quarters per employer	Displacement
			VOUCHERING		
Whites[a]	-	+	-/0	NA	-
Nonwhites[a]	-/0	+/0[s]	-/0	NA	-
			CERTIFICATION		
Whites	-/0	+	+/0	-	-
Nonwhites	+/0	+/0	0	-/0	-

---

[a] Selectivity coefficients [ ] are negative for both whites and nonwhites.

EXHIBIT V-4

Employment and Training Administration

SUMMARY FOR IMPACTS FOR
THE YOUTH TARGET GROUP

	Outcome				
	Avg. wages during employment	Avg. quarters of employment	Avg. wages	Avg. quarter per employer	Displacement
			VOUCHERING		
Males	+/0	+	+	NA	+
Females	+	+	+	NA	+
			CERTIFICATION		
Male	+	+	+	-/0	-
Female	+/0	+[a]	+/0	-/0	-/0

---

[a] Selectivity coefficients [ ] are negative for both whites and nonwhites.

For the youth target group, it is rather consistently the case that employment is increased by vouchering but the average wage during employment impact is negative. As mentioned above, this is a common pattern of results and suggests that TJTC voucherees have lower paying jobs. The impacts for nonwhite females are short-lived and die out by 1984. Certifications seem to have a favorable impact on youth in terms of both employment and wages. Recall that the voucher treatment group includes both vouchered but noncertified cases and vouchered and certified individuals. The comparison group is eligible, nonvouchered individuals. For certifications, the comparison group is eligible (vouchered or nonvouchered) job finders who were not certified. For these results to be consistent, it is the case that vouchered, but noncertified and nonvouchered, but eligible job finders received much lower wages than certified youth. Nonwhite males do not follow the pattern of the other groups, and have positive impacts that are short-run. The certification study found evidence of TJTC having a negative influence on job retention. For all the most part, displacement estimates were inconsequential for this target group.

The vouchering impacts for the welfare target groups are rather small in magnitude and not significant. Female voucherees in this target group are the only individuals in any target group to have had a negative quarters of employment impact. For males, the employment impact is positive but insignificant. For both sexes, the wage effects are negative. Contrasted to these negative results are certification impacts that are generally positive. For this target group, the employment impacts are positive, and the wages during employment effects are positive for whites but negative, although not significant for blacks and Hispanics. The welfare target group is the only target group for which TJTC reduces turnover, at least for all subgroups but white males. Across the three treatments, displacement tends to be present.

In Exhibit V-3, we see that for disadvantaged veterans, vouchering induces additional employment for both whites and nonwhites, but the negative wage impacts are sufficiently large to cause negative overall wage effects. The certification treatment for the disadvantaged veterans shows a pattern that is identical to the vouchering impacts except that the decline in wages together with the increase in employment virtually offset each other so that there is no difference in average wages for the treatments vis-a-vis the comparison group. TJTC seems to result in more turnover for vets and there is evidence of within population displacement.

In Exhibit V-4, it can be observed that there are no negative earnings or employment impacts for either male or female handicapped individuals. The only "bad" news for the handicapped target group is a statistically significant displacement impact within the target group.

In Exhibits V-5 and V-6 we array the result data by study instead of by target group. The only difference between the exhibits is that in Exhibit V-5 which presents the results of the vouchering study, we have added an additional outcome which reflects whether the lambda selectivity coefficient is positive indicating that a "creaming" type selectivity is occuring or negative indicating that the selectivity is focusing on the most in need. The results for this particular outcome seem highly plausible. For the youth and welfare target groups, the coefficients for white males are negative but are positive for the other subgroups. In general, white males hold an advantage in the labor market, so vouchering agencies help only the most needy. On the other hand, they engage in creaming for nonwhites and white females in order to compete. The negative coefficients for the veterans and handicapped suggest again that vouchering agencies are targeting their effort on the least employable.

EXHIBIT V-5

Employment and Training Administration

SUMMARY OF VOUCHERING STUDY

Race/Sex	Outcome					
	Avg. wages during employment	Avg. quarters of employment	Avg. wages	Avg. quarters per employer	Displacement	Creaming (+) or most disadvantaged (-)
			YOUTH			
White males	-	+	+	NA	0	-
Nonwhite males	-	+	+/0	NA	-	+
White females	-	+	+	NA	+/0	+
Nonwhite females	0	+(s)	+(s)	NA	-/0	+
			WELFARE			
White males	-/0	+/0	-/0	NA	+/0	-
Nonwhite males	-	+/0	-/0	NA	-	+
White females	0	-	-/0	NA	-	+
Nonwhite females	-(s)	-/0	-/0	NA	-/0	+
			VETERANS			
Whites	-	+	-/0	NA	-	-
Blacks/Hispanic	-/0	+/0(s)	-/0	NA	-	-
			HANDICAPPED			
Males	+/0	+	+	NA	+	-
Females	+	+	+	NA	+	-

EXHIBIT V-6

Employment and Training Administration

SUMMARY OF CERTIFICATION STUDY

Race/Sex	Outcome				
	Avg. wages during employment	Avg. quarters of employment	Avg. wages	Avg. quarters per employer	Displacement
YOUTH					
White males	+/0	+	+	-	-
Nonwhite males	-/0	+(s)	+(s)	-	-/0
White females	+	+/0	+	-	-/0
Nonwhite females	+	0	+(s)	-/0	-/0
WELFARE					
White males	+/0	+	+	-/0	0
Nonwhite males	-/0	+	+	+/0	-
White females	+	+	+	+/0	-/0
Nonwhite females	-/0	+	+	+/0	-/0
VETERANS					
Whites	-/0	+	+/0	-	-
Blacks/Hispanic	+/0	+/0	0	-/0	-
HANDICAPPED					
Males	+	+	+	-/0	-
Females	+/0	+(s)	+/0	-/0	-/0

Comparing the first columns of Exhibits V-5 and V-6 shows the contrast between the wages that the certified individuals earn while employed and the wages earned by the vouchered treatment group while employed. Certifications result in relatively higher wages.

2. POLICY IMPLICATIONS

Several results suggest that TJTC vouchering and certification activities are to some extent, creating employment for target group members who would otherwise be unemployed. With the exception of females on welfare, the voucher and certification impacts on average quarters worked per year are positive. Furthermore, in many of the subgroups, evidence of displacement exists. While it is undoubtedly the case that some of the induced employment would have occurred absent the program, it is also clear that TJTC is responsible for some employment generations. This is good news vis-a-vis the programmatic goal of reducing unemployment among the target groups. Displacement is, at worst, a one-for-one substitution, so that the extent that employment is generated will be a direct reduction in unemployment or nonparticipation in the labor force.

With the exception of the handicapped target group, the employment gain for roup, the employment gain seem to be in jobs vouchered individuals seems to be in jobs with low wages relative to the comparison groups. Lower wages may be warrented by the lack of work experience of TJTC vouchered or workers, however, or because there is relatively more general training being provided on the jobs. Our suspicions are that the jobs probably do not provide more training and are simply "poor" jobs by the criterion of low wages. This suspicion is buttressed by the fact that turnover of TJTC vouchered and certified workers is high relative to the comparison groups.

For four of the twelve groups examined, certifications, however, resulted in higher wages during employed quarters and most of the other groups exhibited the positive, although not significant wage effects. RElative to TJTC-eligible individuals who found jobs during or after 1982, certified individuals apprently were in higher wage jobs.

The question which policymakers must address is whether the positive employment gains to the otherwise structurally unemployed target group members (remember this is just a share of all certifications) exceed the costs of the credit. And to determine the answer, the policymakers must take a lifetime earnings and reduced income maintenance payment perspective. For example, suppose TJTC results in certifications of 1000 individuals at a cost to the Treasury of $4000/certification. The total cost would then be $4 million. Suppose further that 20 percent of the certified individuals would have remained unemployed without TJTC. For the benefits of TJTC to exceed the costs, it must be the case that the discounted lifetime additional earnings that accrue to the 200 individuals who become employed because of the program plus any income maintenance payment offsets to these individuals must exceed $4 million (or $20,000 per individual). Our analysis unfortunately provides little guidance on this issue. Longer time series data need to be examined than were available here.

In addition to the policy implications brought forward by this study, it should be recognized that the contract related in the development of an important data base that could support further analyses of TJTC or Employment Service impacts.

APPENDIX: DATA BASE DOCUMENTATION

INTRODUCTION

This appendix documents the files used and processing steps taken to produce the final analysis files for the TJTC evaluation. The appendix includes: system flow chart, process directory, file listings, and data dictionary.

In the system flow chart, data files are represented with circles and processes with rectangles. Data files are numbered from F-1 to F-49, while processes are identified from S-1 to S-24. The processing steps shown on pages 2-4 of the flow chart were repeated separately for all 12 states. For simplicity and lack of repetition, the diagrams on these pages show the general flow for only one state and the user should be aware that the same general steps were taken for all the states under study. Naturally, because of the different processing and formatting used by each state, the processes on these pages are not all identical in syntax but accomplish the same task. Furthermore, some preliminary and supporting processes were undertaken for each state. These auxiliary processes and the differences between states are fully documented in the main process for each state.

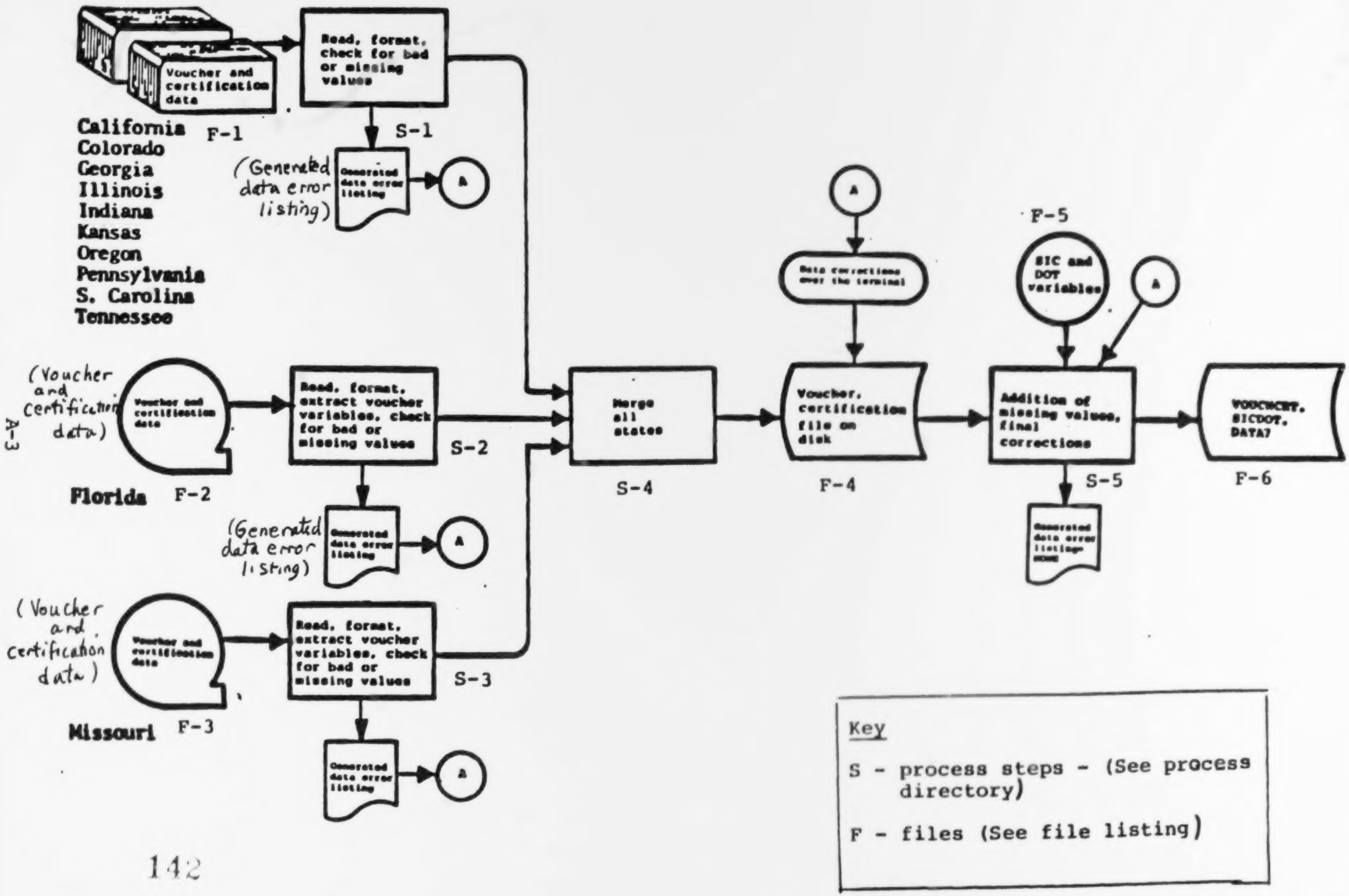
The process dictionary gives a general description of each process. The processes are listed by the order of the reference number (S-1 to S-28). All these processes reside on volume CVT290. In addition to a brief description, input and output files to these processes are listed in separate columns. The user can use the reference number on the system flow chart to find the process on the process directory and vice versa.

The file directory gives the necessary information needed to find and process the files. The reference number (F-1 to F-49) can be used to find the related file on the file directory. The column volume/serial identifies the tape on which the file resides. The description column gives the file characteristics such as logical record length and block size and other related information. The DSN column gives data set name as is on the tape.

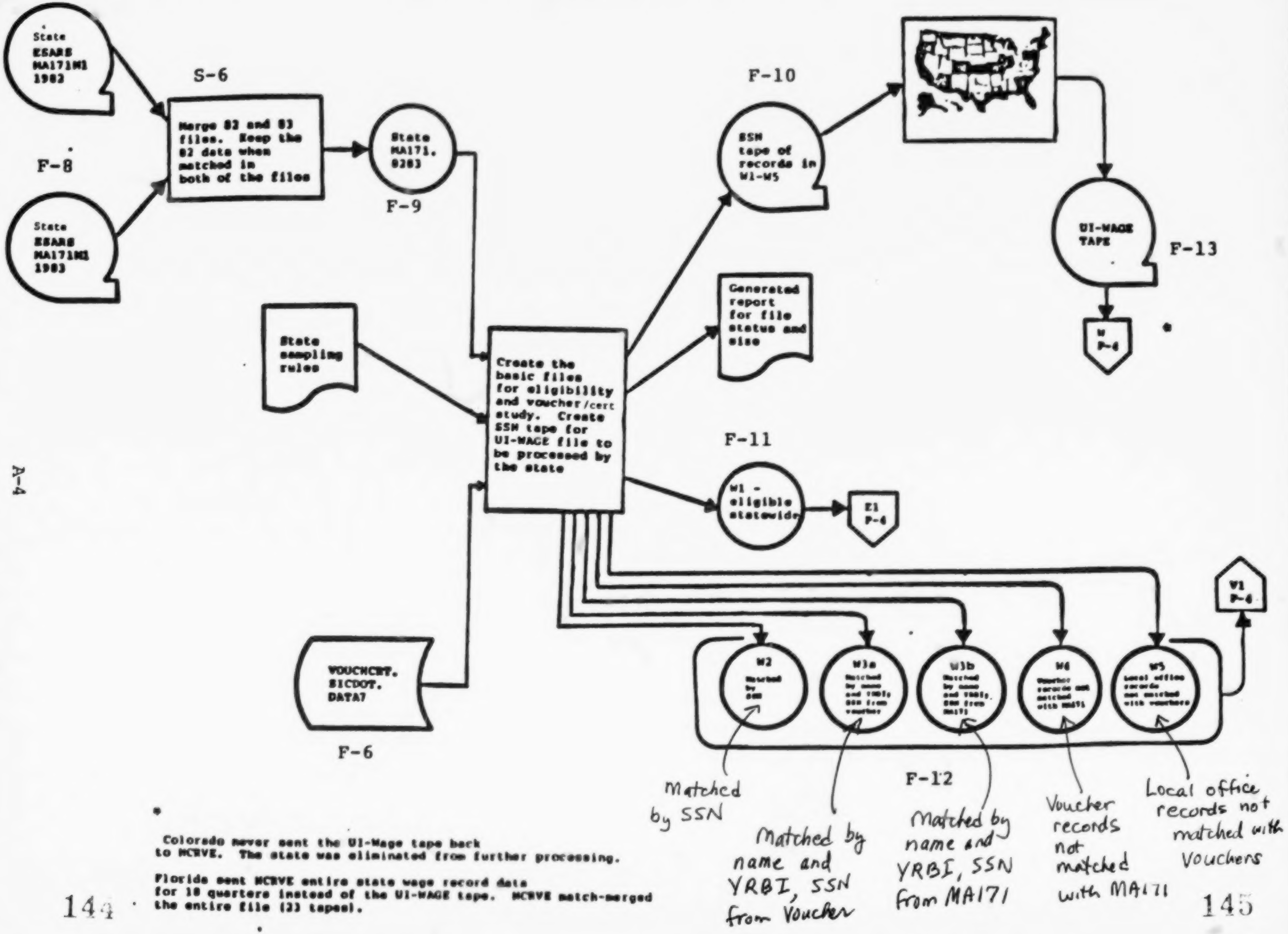
The data dictionary contains the description of the variables used. Since the final analysis file is a SAS data set, the user need not worry about the physical columns for each record since this information is stored in the beginning of a SAS data set. The user can reference a variable by just referring to its name. The origin column gives the reference number to a file or a process which the variable came from or was created in.

The two attached documents are ESARS documentation of MA171 and MA351 records. These two documents are referred to in the data dictionary.

SYSTEM FLOWCHART

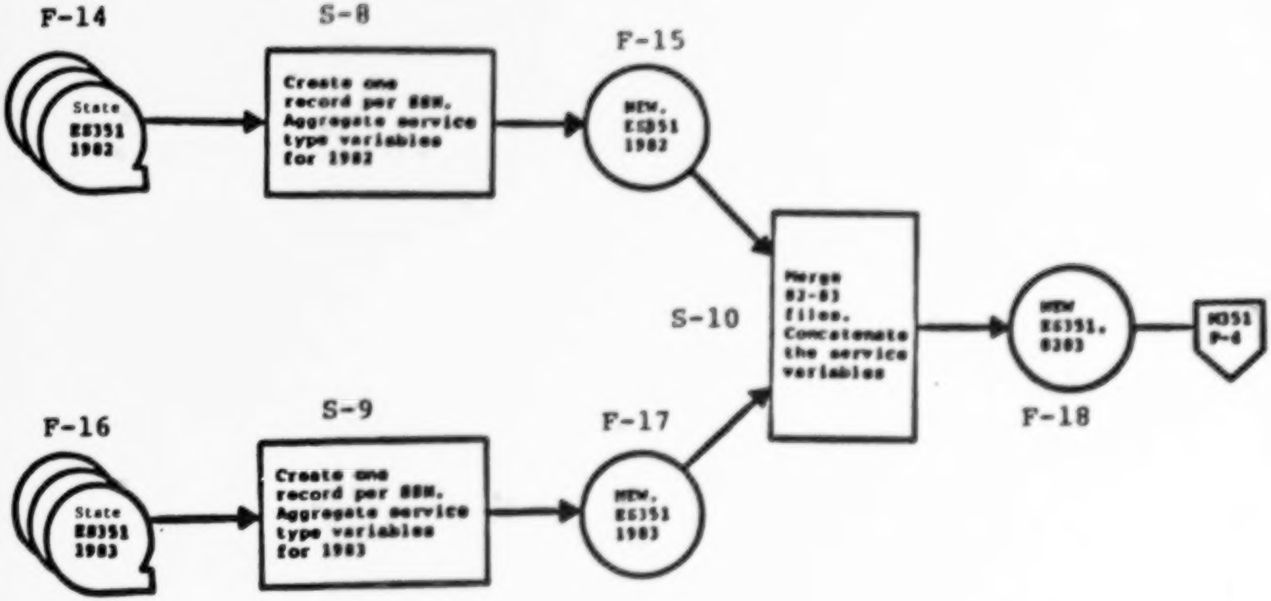

Voucher and certification data
Read, format, check for bad or missing values
California
Colorado
Georgia
Illinois
Indiana
Kansas
Oregon
Pennsylvania
S. Carolina
Tennessee
F-1
S-1
(Generated data error listing)
Generated data error listing
A
(Voucher and certification data)
Voucher and certification data
Read, format, extract voucher variables, check for bad or missing values
S-2
Florida
F-2
(Generated data error listing)
Generated data error listing
A
(Voucher and certification data)
Voucher and certification data
Read, format, extract voucher variables, check for bad or missing values
S-3
Missouri
F-3
Generated data error listing
A
Merge all states
S-4
A
Data corrections over the terminal
Voucher, certification file on disk
F-4
F-5
SIC and DOT variables
A
Addition of missing values, final corrections
S-5
Generated data error listings NONE
VOUCHCRT. SICDOT. DATA7
F-6
Key
S - process steps - (See process directory)
F - files (See file listing)

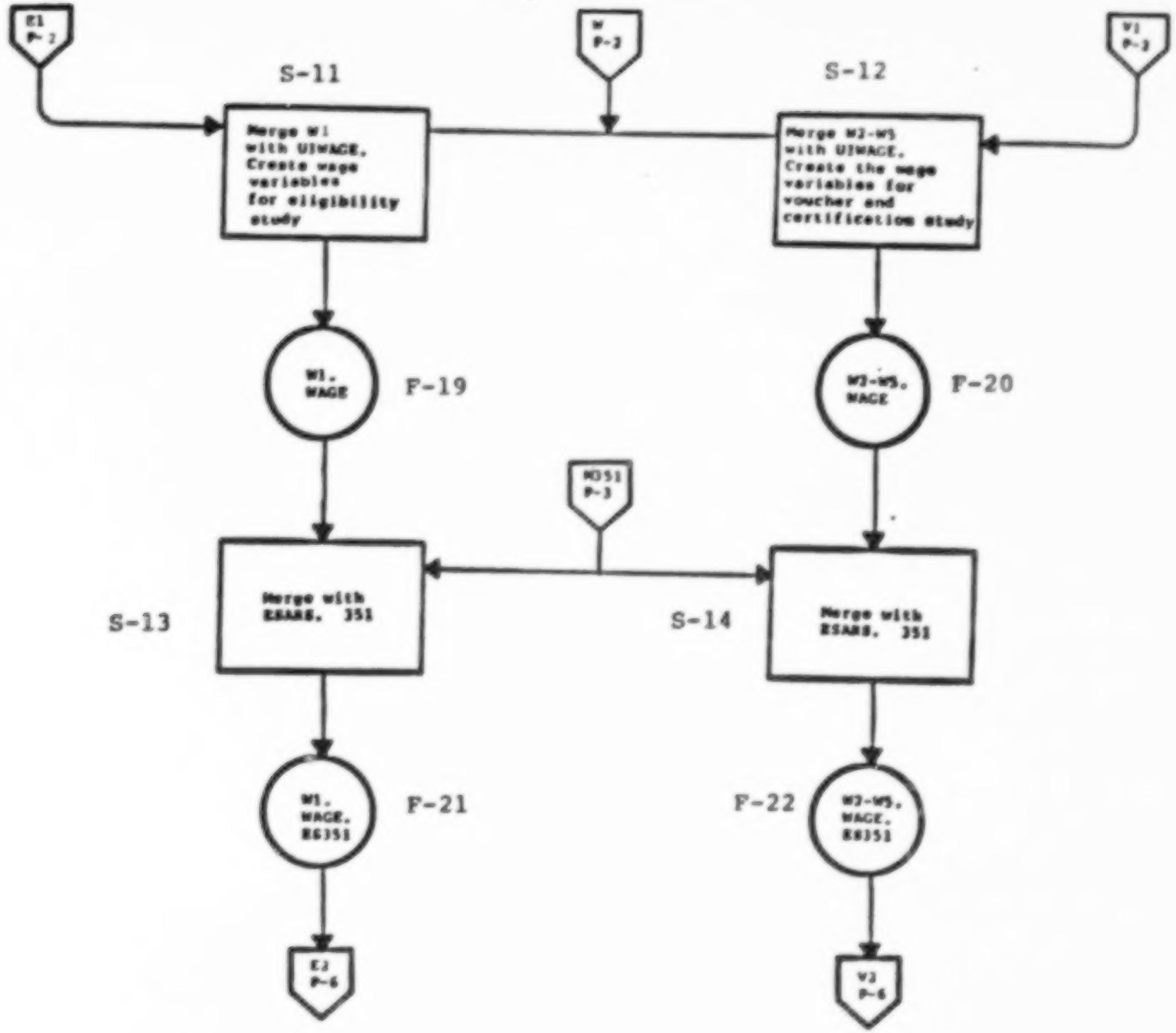
SYSTEM FLOWCHART—cont.


F-7
State
ESARS
MA171M1
1982
F-8
State
ESARS
MA171M1
1983
S-6
Merge 82 and 83 files. Keep the 82 data when matched in both of the files
State
MA171.
8283
F-9
State sampling rules
VOUCHCRT.
SICDOT.
DATA7
F-6
Create the basic files for eligibility and voucher/cert study. Create SSN tape for UI-WAGE file to be processed by the state
F-10
SSN
tape of
records in
W1-W5
Generated report for file status and size
F-11
W1 -
eligible
statewide
E1
P-4
UI-WAGE
TAPE
F-13
W
P-4
V1
P-4
W2
Matched by SSN
W3a
Matched by name and YRBI, SSN from voucher
W3b
Matched by name and YRBI, SSN from MA171
W4
Voucher records not matched with MA171
W5
Local office records not matched with vouchers
F-12
Matched by SSN
Matched by name and YRBI, SSN from Voucher
Matched by name and YRBI, SSN from MA171
Voucher records not matched with MA171
Local office records not matched with Vouchers

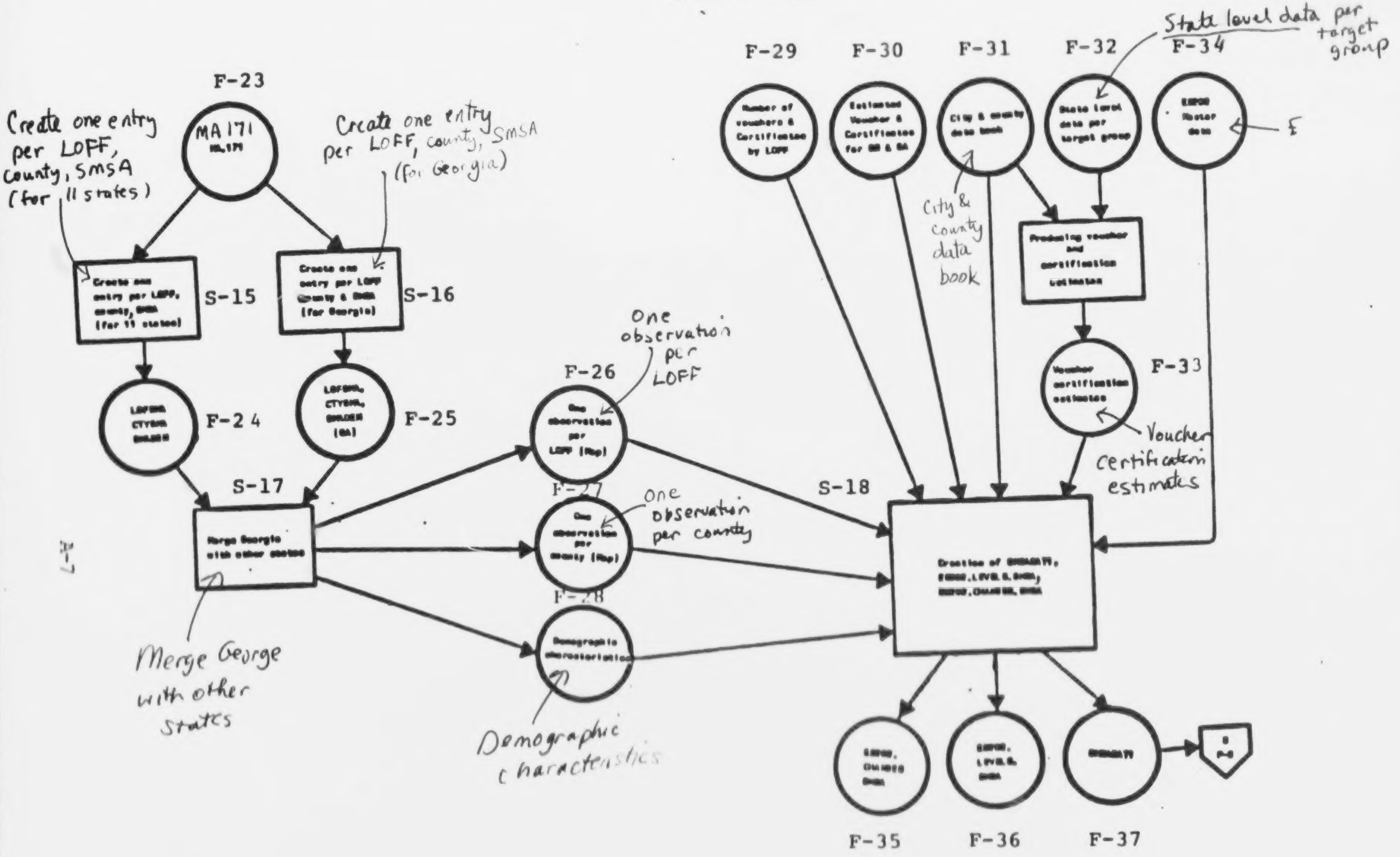
Colorado never sent the UI-Wage tape back to NCRVE. The state was eliminated from further processing.

Florida sent NCRVE entire state wage record data for 10 quarters instead of the UI-WAGE tape. NCRVE match-merged the entire file (23 tapes).

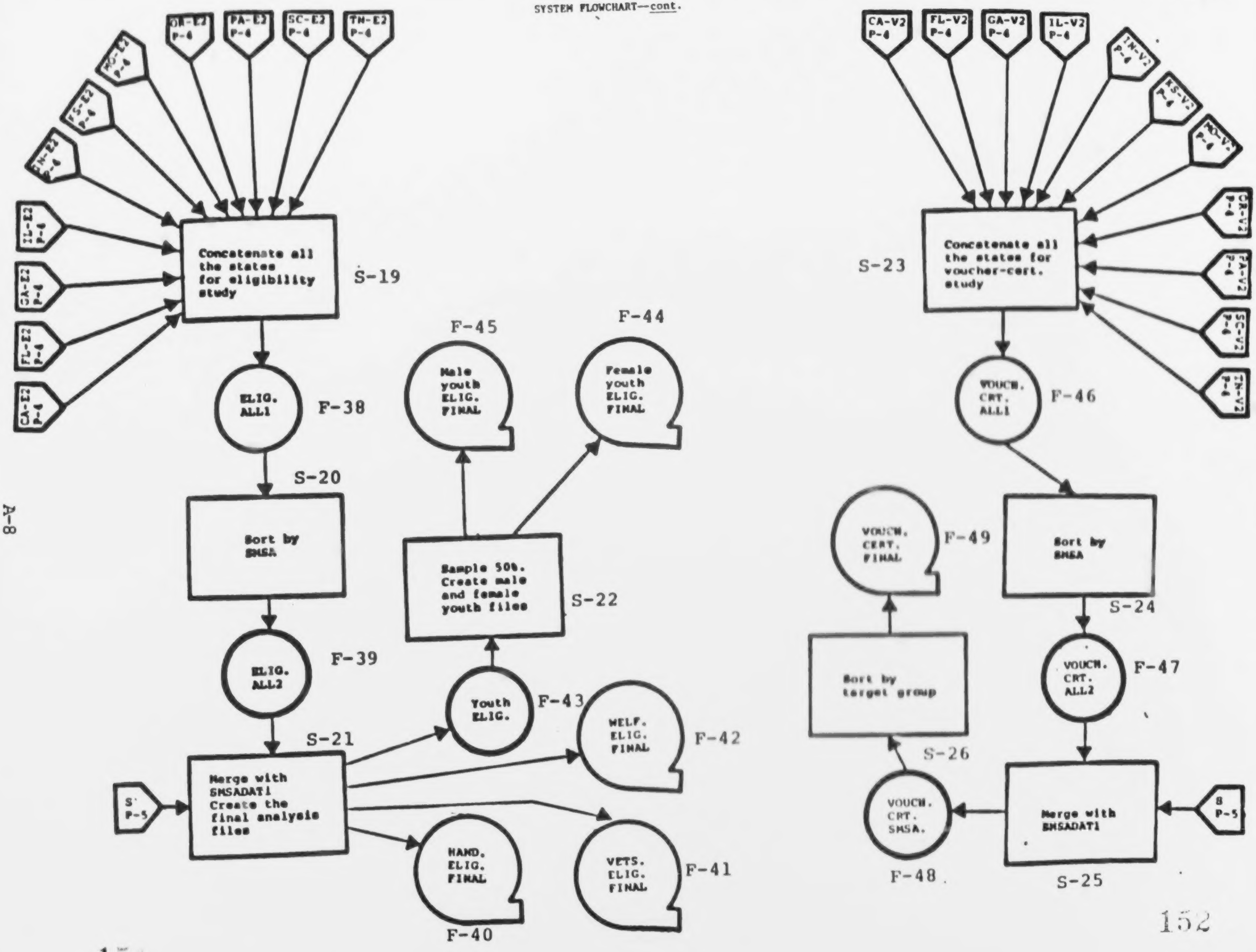

F-14
State
E6351
1982
S-8
Create one record per SSN. Aggregate service type variables for 1982
F-15
NEW.
E6351
1982
S-10
Merge 82-83 files. Concatenate the service variables
F-18
NEW
E6351.
8283
H351
P-4
F-16
State
E6351
1983
S-9
Create one record per SSN. Aggregate service type variables for 1983
F-17
NEW.
E6351
1983


E1
P-2
W
P-2
V1
P-2
S-11
S-12
Merge W1
with UIWAGE.
Create wage
variables
for eligibility
study
Merge W2-W5
with UIWAGE.
Create the wage
variables for
voucher and
certification study
W1.
WAGE
F-19
W2-W5.
WAGE
F-20
ES351
P-3
S-13
Merge with
ESARS. 351
S-14
Merge with
ESARS. 351
W1.
WAGE.
ES351
F-21
F-22
W2-W5.
WAGE.
ES351
E2
P-6
V2
P-6

SYSTEM FLOWCHART--cont.


F-23
MA 171
Create one entry per LOFF, county, SMSA (for 11 states)
Create one entry per LOFF, county, SMSA (for Georgia)
Create one entry per LOFF, county, SMSA (for 11 states)
S-15
Create one entry per LOFF County & SMSA (for Georgia)
S-16
F-24
LOFSMA CTYSMA
F-25
LOFSMA, CTYSMA, (GA)
S-17
Merge Georgia with other states
Merge George with other states
F-26
One observation per LOFF (Map)
One observation per LOFF
F-27
One observation per county (Map)
One observation per county
F-28
Demographic characteristics
Demographic characteristics
F-29
Number of vouchers & Certification by LOFF
F-30
Estimated Voucher & Certification
F-31
City & county data book
City & county data book
F-32
State level data per target group
State level data per target group
F-34
Master data
E
Producing voucher and certification estimates
F-33
Voucher certification estimates
Voucher certification estimates
S-18
Creation of
F-35
F-36
F-37

SYSTEM FLOWCHART--cont.


OR-E2 P-4
PA-E2 P-4
SC-E2 P-4
TN-E2 P-4
MO-E2 P-4
KS-E2 P-4
IN-E2 P-4
IL-E2 P-4
GA-E2 P-4
FL-E2 P-4
CA-E2 P-4
Concatenate all the states for eligibility study
S-19
ELIG. ALL1
F-38
S-20
Sort by SMSA
ELIG. ALL2
F-39
S-21
S P-5
Merge with SMSADAT1 Create the final analysis files
Youth ELIG.
F-43
Sample 50%. Create male and female youth files
S-22
F-45
Male youth ELIG. FINAL
F-44
Female youth ELIG. FINAL
WELF. ELIG. FINAL
F-42
HAND. ELIG. FINAL
F-40
VETS. ELIG. FINAL
F-41
CA-V2 P-4
FL-V2 P-4
GA-V2 P-4
IL-V2 P-4
IN-V2 P-4
KS-V2 P-4
MO-V2 P-4
OR-V2 P-4
PA-V2 P-4
SC-V2 P-4
TN-V2 P-4
Concatenate all the states for voucher-cert. study
S-23
VOUCH. CRT. ALL1
F-46
Sort by SMSA
S-24
VOUCH. CRT. ALL2
F-47
Merge with SMSADAT1
S-25
S P-5
VOUCH. CRT. SMSA.
F-48
S-26
Sort by target group
VOUCH. CERT. FINAL
F-49

PROCESS DIRECTORY

Reference Number	Process	Flow Chart Page Number	Description	Input	Output
S-1	VOUCH.PROC1	1	This process consists of reading all of the vouchers and certification data that the NCRVE data entry operator entered from voucher forms.	F-1	F-1A
S-2	VOUCH.PROC2	1	This process involves reading the Florida Voucher tapes and extracting the variables needed for the voucher study and formatting it in the same manner as in F-1A.	F-2	F-2A
S-3	VOUCH.PROC3	1	This process involves reading the Missouri Vouchers tape and extracting the variables needed for the voucher study and formatting it in same manner in F-1A.	F-3	F-3A
S-4	VOUCH.PROC4	1	Merging Missouri and Florida data with than other states.	F-1A, F-2A, F-3A	F-4
S-5	VOUCH.PROC6	1	Adding the SIC and DOT variables to certification data. Further cleaning of data and eliminating of bad records.	F-4, F-5	F-6
S-6	CALIF.MERG171 TENN.MERG171	2	Merging of 1982 and 1983 MA171 files and keeping the needed variables. In case of a match in both files, the value from 82 record was used.	F-7, F-8	F-9
S-7	CALIF.SAMPLE171 . . . TENN.SAMPLE171	2	This process creates the basic work files for the eligibility and VOUCHER-CERT. Study. For the eligibility study, every eligible case was kept except for youth, where only 40% were kept. For the Voucher-Cert. Study, all the voucher records were merged with MA171 records of same local office. A tape of all social security numbers was produced and sent to the state.	F-6, F-9	F-10, F-11, F-12
S-8, S-9	CAL.ES35182 CAL.ES35183 . TENN.ES35182 TENN.ES35183	3	MA351 files contained multiple records per person. Each file typically consisted of millions of records. This process creates one record per person with aggregated service type variable in order to save space and CPU-time. Each variable is made of two parts--each part containing the values for 82 and 83.	F-14, F-16	F-15, F-17

PROCESS DIRECTORY--cont.

Reference Number	Process	Flow Chart Page Number	Description	Input	Output
S-10	CAL.MERG351 . . . TENN.MERG351	3	This process merges the NEW.ES35182 with NEW.ES35183. The corresponding variables are concatenated. In case of no match, they are zero filled for the missing year.	F-15, F-17	F-18
S-11	CAL.ELIG.WAGE . . . TENN.ELIG.WAGE	4	Merging the W1 work file with the wage data sent by state and creating the wage variables for the eligibility study.	F-11, F-13	F-19
S-12	CAL.VOUCH.WAGE	4	Merging W2-W5 files with the wage data sent by state and creating the wage variables for the voucher-certification study. For W3a and W3b, in case of no match, the record was dropped from the voucher-cert. file.	F-12, F-13	F-20
S-13	CAL.MRGWORK. ELIG WAGE . . . TENN.MRGWORK. ELIG.WAGE	4	MERGING W1.WAGE with NEW.ES351.8283	F-18, F-19	F-21
S-14	CAL.MRGWORK. VOUCH.WAGE . . . TENN.MRGWORK. VOUCH.WAGE	4	Merging W2W5.WAGES with NEWES351.8283	F-18, F-20	F-22
S-15	LOFF.SMSA	5	This process maps the local offices in MA171 files to SMSA, one observation per local office. It also maps the SMSA to each county and creates the demographical characteristics per SMSA (for every state but Georgia).	F-23	F-24
S-16	GASMAMAP	5	This is the same process as S-15 ex-with different formatting which was used by Georgia.	F-23	F-25
S-17	MGACOLOF	5	This process merges Georgia with the other 11 states. Separate files were created for local office-SMSA, county-SMSA and demographic chracteristics.	F-24, F-25,	F-26, F-27, F-28
S-18	MKSMADAT	5	This process creates the SMSADAT1. Besides SMSADAT1, two other files are created (ES202.LEVELS.SMSA and ES202.CHANGE.SMSA).	F-26, F-27, F-28, F-29, F-30, F-31, F-33, F-34	F-35, F-36, F-37

PROCESS DIRECTORY--*cont*.

Reference Number	Process	Flow Chart Page Number	Description	Input	Output
S-19	ELIG.CONCAT	6	This process concatenate WI.WAGE. ES351 files of all states into one eligibility file.	F-21	F-31
S-20	ELIG.SORT	6	This process sorts ELIG.ALL1 by SMSA.	F-38	F-39
S-21	ELIG.MRGSMSA	6	SMSADAT1 is merged with ELIG.ALL2 and produces the final analysis files for Welfare, Handicapped, Veterans, and Youth Study.	F-39, F-37	F-40, F-41, F-42 F-43
S-22	YOUTH.SAMPLE	6	Because of the large number of cases, the YOUTH.ELIG file was divided into male and female categories and further sampled by 50%.	F-43	F-44, F-45
S-23	VOUCHALL. CONCAT WAGE	6	This process concatenate W2.W5. WAGE.ES351 files of all States into one voucher-cert file.	F-21	F-46
S-24	VOUCHALL.CONCAT	6	This processor sorts VOUCH.CRT.ALL1 by SMSA.	F-46	F-47
S-25	VOUCH.MRG SMSA	6	SMSADAT1 is merged with VOUCH.CRT.ALL2	F-47	F-48
S-26	VOUCHALL.SORT.	6	Sort by target group.	F-48	F-49

FILE DIRECTORY

Reference Number	Data Set Name	Volume/ Serial Number	Flow Chart Page	Description
F-2	TJTC SAMPLE	CVT250	1	STATE = FLORIDA, (LRECL=275, BLKSIZE=2,750) LABEL = 2, NO. OF RECORDS = 7,294
F-3	TJTC SAMPLE	CVT244	1	STATE = MISSOURI, (LRECL=114, BLKSIZE=14,4000) LABEL = 1 NO. OF RECORDS = 13,602
F-6	VOUCHCRT.SICDOT.DATA7	CVT271*	1,2	LABEL = 1 (LRECL=80, BLKSIZE=800), NO. OF RECORDS = PER STATE CA = 833 CO = 630 FL = 5,026 GA = 646 IL = 480 IN = 1,035 KS = 648 MO = 2,254 OR = 558 PA = 1,067 SC = 596 IN = 625
F-7,F-8			2	These MA171 files are listed by the order of state and year. Note: LRECL = 112 for all MA171
	SEP82.MA171.MI1	CVT230		STATE = CALIFORNIA, YEAR = 1982, LABEL = 2, BLKSIZE = 32,704, NO. OF RECORDS = 367,977
	MAA171.FY83	CVT230		STATE = CALIFORNIA, YEAR = 1983, LABEL = 3, BLKSIZE = 32,704, NO. OF RECORDS = 359,926
	ES.MA171M1.FY82	CVT220		STATE = COLORADO, YEAR = 1982, LABEL = 3, BLKSIZE = 11,200, NO. OF RECORDS = 359,926,
	MA171M1.FY83	CVT220		STATE = COLORADO, YEAR = 1983, LABEL = 4, BLKSIZE = 112,000, NO. OF RECORDS = 287,890
	ESX.MA171M1.FY82	CVT220		STATE = FLORIDA, YEAR = 1982, LABEL = 1, BLKSIZE = 22,400, NO. OF RECORDS = 818,244
	ES.MA171M1.FY83	CVT256		STATE = FLORIDA, YEAR = 1983, LABEL = 1, BLKSIZE = 30,016, NO. OF RECORDS = 832,756
	MA.MA171M1.FY82	CVT221		STATE = GEORGIA, YEAR = 1982, LABEL = 1 BLKSIZE = 16,352, NO. OF RECORDS = 514,628
	MA.MA171M1.FY83	CVT222		STATE = GEORGIA, YEAR = 1983, LABEL = 1, BLKSIZE = 16,352, NO. OF RECORDS = 514,628
	MA171.FY82	CVT249		STATE = ILLINOIS, YEAR = 1982, LABEL = 1, BLKSIZE = 12,308, NO. OF RECORDS = 977,774
	MA171.FY83	CVT272		STATE = ILLINOIS, YEAR = 1983, LABEL = 1, BLKSIZE = 12,208, NO. OF RECORDS = 1,058,443
	MA171M1.YR82	CVT272		STATE = INDIANA, YEAR = 1982, LABEL = 2, BLKSIZE = 12,320, NO. OF RECORDS = 608,342
	MA171M1.YR83	CVT272		STATE = INDIANA, YEAR = 1983, LABEL = 3 BLKSIZE = 12,320, NO. OF RECORDS = 666, 818
	ES.ER10.MA17182	CVT215		STATE = KANSAS, YEAR = 1982, LABEL = 2, BLKSIZE = 22,400, NO. OF RECORDS = 221,600
	ES.ER10.SEPT171	CVT252		STATE = KANSAS, YEAR = 1983, LABEL = 1, BLKSIZE = 22,400, NO. OF RECORDS = 210, 496

*Note: All tapes are STANDARD LABEL and RECFM = FB unless otherwise specified.

FILE DIRECTORY--*cont*.

Reference Number	Data Set Name	Volume/ Serial Number	Flow Chart Page	Description
	MA171.FY82	CVT242		STATE = MISSOURI, YEAR = 1982, LABEL = 1, BLKSIZE = 22,400, NO. OF RECORDS = 594,602
	MA171.FY83	CVT242		STATE = MISSOURI, YEAR = 1983, LABEL = 2 BLKSIZE = 22,400, NO. OF RECORDS = 641,305
	ES.MA171M1.FY82	CVT240		STATE = OREGON, YEAR = 1982, LABEL = 1, BLKSIZE = 7,840, NO. OF RECORDS = 234,420
	ES.MA171M1.FY83	CVT240		STATE = OREGON, YEAR = 1983, LABEL = 2, BLKSIZE = 2,240, NO. OF RECORDS = 295,225
	MA.F171T171.F682	CVT237		STATE = PENNSYLVANIA, YEAR = 1982, LABEL = 11, BLKSIZE = 8000, NO. OF RECORDS = 567,100
	MA.F171T171.FY83	CVT238		STATE = PENNSYLVANIA, YEAR = 1983, LABEL = 1, BLKSIZE = 28,000 NO. OF RECORDS = 1,003,954
	ES.MA171M1.FY82	CVT239		STATE = SOUTH CAROLINA, YEAR = 1982, LABEL = 2, BLKSIZE = 11,984, NO. OF RECORDS = 319,897
	MA171MI.FY83	CVT268		STATE = SOUTH CAROLINA, YEAR = 1983, LABEL = 1, BLKSIZE = 11,984, NO. OF RECORDS = 323,506
	MA171.FY82	CVT233		STATE = TENNESSEE, YEAR = 1984, LABEL = 1, BLKSIZE = 15,904, NO. OF RECORDS = 293,941
	MA171.FY83	CVT233		STATE = TENNESSEE, YEAR = 1983, LABEL = 2, BLKSIZE = 15,904, NO. OF RECORDS = 339,467
F-11,F-12	N/A	**	2	Below is the listing of number of cases in W1-W5 files for each state: CA: W1 = 318,783, W2 = 651, W3 = 7, W4 = 162, W5 = 9,068 CO: W1 = 138,092, W2 = 334, W3 = 9, W4 = 267, W5 = 4,524 FL: W1 = 312,358, W2 = 3,715, W3 = 43, W4 = 1,124, W5 = 2,866 GA: W1 = 273,579, W2 = 520, W3 = 8 W4 = 113, W5 = 2,331 IL: WI = 447,090, W2 = 432, W3 = 15, W4 = 33, W5 = 3,974 IN: W1 = 291,526, W2 = 972, W3 = 15, W4 = 37, W5 = 2,802, KS: W1 = 95,485, W2 = 528, W3 = 10, W4 = 107, W5 = 4,130 MS: W1 = 299,717, W2 = 1,542, W3 = 48, W4 = 682, W5 = 5,697 OR: W1 = 93,389, W2 = 475, W3 = 11, W4 = 71, W5 = 3,092 PA: W1 = 643,844, W2 = 714, W3 = 18, W4 = 329, W5 = 7,343 SC: W1 = 157,755, W2 = 454, W3 = 10, W4 = 122, W5 = 7,445

**Intermediate files--not kept.

FILE DIRECTORY···cont.

Reference Number	Data Set Name	Volume/ Serial Number	Flow Chart Page	Description
F-13			2	Below is the listing of the WI-WAGE files that were sent to us by the states under study
	WAGESIC	CVT257		STATE=CALIFORNIA
	FLOR.WAGES.SORTEN	CVT274		STATE=FLORIDA
	GEORG.WAGE.SASDATA	CVT234		STATE=GEORGIA
	ILLINOIS.WAGE.SASDATA	CVT263		STATE=ILLINOIS
	INDIANA.WAGE.SASDATA	CVT278		STATE=INDIANA
	ES.KANS.WAGES	CVT229		STATE=KANSAS
	MISS.WAGE.SASDATA	CVT261		STATE=MISSOURI
	OREGON.SSN.RES	CVT227		STATE=OREGON
	PENN.WAGE.SASDATA	CVT228		STATE=PENNSYLVANIA
	SC.CWBH.TJTC	CVT267		STATE=S. CAROLINA
	TENN.WAGE.SASDATA	CVT260		STATE=TENNESSEE
F-14,F-16			3	Below is the listing of MA351 files by the order of STATE & YEAR
	EM.ESS.SEP82.MAA351.M1	CVT230		STATE = CALIFORNIA, YEAR = 82, LABEL = 1 (LRECL=56, BLKSIZE=32,704), NO. OF RECORDS = 223,454
	EM.ESS.SEP83.MAA351.M1	CVT231		STATE = CALIFORNIA, YEAR = 83, LABEL = 1 (LRECL=56, BLKSIZE=32,704), NO. OF RECORDS = 1,477,590
	ESX.MA351M1.FY82	CVT219		STATE = COLORADO, YEAR = 82, (LRECL=60, BLKSIZE=12,000), NO. OF RECORDS IN FIRST FILE = 758,340, NO. OF RECORDS IN SECOND FILE = 487,620 (need to concatenate the two files)
	ESX.MA351M1.FY83	CVT220		STATE = COLORADO, YEAR = 83, (LRECL=60, BLKSIZE=12,000), NO. OF RECORDS IN FIRST FILE = 605,020, NO. OF RECORDS IN SECOND FILE = 441,609 (need to concatenate the two files)
	ESX.MAE51.M1.FY82	CVT223 CVT224		STATE = FLORIDA, YEAR = 82, LABEL = 1 (LRECL=56, BLKSIZE=18,600), NO. OF RECORDS = 3,306,519, TWO REELS
	ESX.MA351M1.FY83	CVT225 CVT226		STATE = FLORIDA, YEAR = 83, LABEL = 1, (LRECL=56, BLKSIZE=12,600), NO. OF RECORDS = 3,404,334, TWO REELS
	MA.MA351M1.FY82	CVT212		STATE = GEORGIA, YEAR = 82, LABEL = 1, (LRECL=56, BLKSIZE=16,352), NO. OF RECORDS = 2,438,278
	MA.MA351M1.FY83	CVT213		STATE = GEORGIA, YEAR = 83, LABEL = 1, (LRECL=56, BLKSIZE=16,352), NO. OF RECORDS = 2,060,602
	MA351M1.FY82	CVT245 CVT246		STATE = ILLINOIS, YEAR = 82, LABEL = 1, (LRECL=56, BLKSIZE=12,208), NO. OF RECORDS = 3,558,004, TWO REELS
	MA351M1.FY83	CVT247 CV5248		STATE = ILLINOIS, YEAR = 83, LABEL = 1, (L43CL=56, BLKSIZE=12,208) NO. OF RECORDS = 2,983,046, TWO REELS

FILE DIRECTORY---cont.

Reference Number	Data Set Name	Volume/ Serial Number	Flow Chart Page	Description
	ONE.MA351M1.FY82 (LABEL=1) TWO.MA351M1.FY82 (LABEL=2) LAST.MA351M1.FY82 (LABEL=3)	CVT201 CV202		STATE = INDIANA, YEAR = 82, (LRECL = 56, (LRECL=56, BLKSIZE=28,000), NO. OF RECORDS = 2,758,100, TWO REELS, (need to concatenate the three files)
	ONE.MA351M1.FY83 (LABEL=1) TWO,MA351M1.FY83 (LABEL=2) LAST.MA351M1.FY83 (LABEL=3)	CVT205 CVT206		STATE = INDIANA, YEAR = 83, (LRECL=56, (BLKSIZE=28,000), NO. OF RECORDS = 2,839,146, TWO REELS, (need to concatenate the three files)
	ES.ER10.MA35182	CVT214		STATE = KANSAS, YEAR = 82, (LR3CL=56, BLKSIZE=28,000), NO. OF RECORDS = 981,053
	ES.3410.MA35183	CVT215		STATE = KANSAS, YEAR = 83, LABEL = 1, (LRECL=56, BLKSIZE=28,000), NO. OF RECORDS = 959,044
	T.JWH.MACRO.SYSTEMS. MA351.FY82	CVT209 CVT210		STATE = MISSOURI, YEAR = 82, LABEL = 1, (LRECL=56, BLKSIZE=24,528), NO. OF RECORDS = 3,065,883, TWO REELS
	T.JWH.MACRO.SYSTEMS.	CVT211		STATE = MISSOURI, YEAR = 83, LABEL = 1, (LRECL=56, BLKSIZE=24,528), TWO REELS
	ES.MA351.FY82	CVT207		STATE = OREGON, YEAR = 82, LABEL = 1, (LRECL=56, BLKSIZE=11,200), NO. OF RECORDS = 1,136,362
	ES.MA351M1.FY83	CVT208		STATE = OREGON, YEAR = 83, LABEL = 1, (LRECL=56, BLKSIZE=11,300), NO. OF RECORDS = 1,293,951
	MA.F351T311.FY82	CVT235 CVT236		STATE = PENNSYLVANIA, YEAR = 82, LABEL = 1 (LRECL=56, BLKSIZE=28,000), NO. OF RECORDS = 3,017,356, TWO REELS
	MA.F351T311.FY83	CVT216 CVT217		STATE = PENNSYLVANIA, YEAR 83, LABEL = 1, (LRECL=56, BLKSIZE=12,922), NO. OF RECORDS = 3,956,694, TWO REELS
	ES.MA351M1.FY82	CVT204		STATE = SOUTH CAROLINA, YEAR = 82, LABEL = 1, (LRECL=56, BLKSIZE=11,984), NO. OF RECORDS = 1,717,082
	ES.MA351M1.FY83	CVT239		STATE = SOUTH CAROLINA, YEAR = 83, LABEL = 1, (LRECL=56, BLKSIZE=11,984), NO. OF RECORDS = 1,819,541
	ONE.MA351.FY82 (LABEL=1), (NO. OF RECORDS=768,645) TWO.MA351.FY82 (LABEL=2), (NO. OF RECORDS=771,210) LAST.MA351.FY82 (LABEL=3), (NO. OF RECORDS=251,036)	CVT232		STATE = TENNESSEE, YEAR = 82, (LRECL=56, BLKSIZE=15,008), (need to concatenate three files)
F-40	HAND.ELIG.FINAL	CVT279, CVT280	6	Handicapped analysis file, LABEL=1
F-41	VETS.ELIG.FINAL	CVT280	6	Veterans analysis file, LABEL=2

FILE DIRECTORY---*cont*.

Reference Number	Data Set Name	Volume/ Serial Number	Flow Chart Page	Description
F-42	WELF.ELIG.FINAL	CVT276 CVT277	6	Welfare analysis file, LABEL=1
F-44	FEMALE.YOUTH.ELIG	CVT271 CVT272	6	Female youth final analysis file, LABEL=1
F-45	MALE.YOUTH.ELIG.FINAL	CVT275 CVT281	6	Male youth final analysis file, LABEL=1
F-49	VOUCH.CRT.FINAL	CVT273	6	Final analysis file for voucher and certification study

DATA DICTIONARY

Name	Type	Length	File	Origin	Description
AFDC80	NUM	8	VOUCH/ELIG	S-18	AFDC recipients in SMSA in 1980
AGEGRP	CHAR	1	VOUCH	F-7	(MA.171, attached document)
AGE80	NUM	2	VOUCH/ELIG	S-21	Age in 1980
AGE81	NUM	2	VOUCH/ELIG	S-21	Age in 1981
AGE82	NUM	2	VOUCH/ELIG	S-21	Age in 1982
AGE83	NUM	2	VOUCH/ELIG	S-21	Age in 1983
AGE84	NUM	2	VOUCH/ELIG	S-21	Age in 1984
BLKHSP	NUM	2	VOUCH/ELIG	S-21	'1' for black or hispanic applicant
CERT	NUM	8	VOUCH/ELIG	S-18	Total certified in SMSA
CHEK8283	NUM	8	VOUCH/ELIG	S-6	MA.171 record from 1982 or 1983 or both, '1' = 1982, '2' = 1983, '3' = both
CHTAVG1	NUM	8	VOUCH/ELIG	S-18	Change in total employment in SMSA from quarter to next
CHTAVG2	NUM	8	VOUCH/ELIG	S-18	
CHTAVG3	NUM	8	VOUCH/ELIG	S-18	
CHTAVG4	NUM	8	VOUCH/ELIG	S-18	
CHTAVG5	NUM	8	VOUCH/ELIG	S-18	
CHTAVG6	NUM	8	VOUCH/ELIG	S-18	
CHTAVG7	NUM	8	VOUCH/ELIG	S-18	
CHTAVG8	NUM	8	VOUCH/ELIG	S-18	
CHTAVG9	NUM	8	VOUCH/ELIG	S-18	
CHTAVG10	NUM	8	VOUCH/ELIG	S-18	
CHTAVG11	NUM	8	VOUCH/ELIG	S-18	
CHTAVG12	NUM	8	VOUCH/ELIG	S-18	
CHTAVG13	NUM	8	VOUCH/ELIG	S-18	
CHTAVG14	NUM	8	VOUCH/ELIG	S-18	
CHTAVG15	NUM	8	VOUCH/ELIG	S-18	
CHTAVG16	NUM	8	VOUCH/ELIG	S-18	
CHTAVG17	NUM	8	VOUCH/ELIG	S-18	
CLAI	CHAR	1	VOUCH/ELIG	F-7	(MA.171, attached document)
CNTY	CHAR	3	VOUCH/ELIG	F-7	(MA.171, attached document)
DATE	CHAR	6	VOUCH/ELIG	F-7	(MA.171, attached document)
DISABL80	NUM	8	VOUCH/ELIG	S-18	Number disabled in SMSA (City/county data book)
DISAD	CHAR	1	VOUCH/ELIG	F-7	(MA.171, attached doucment)
DISXAG80	NUM	2	VOUCH/ELIG	S-21	Disadv* age80, 0 for non-disadvantaged
DISXAG81	NUM	2	VOUCH/ELIG	S-21	Disadvantaged* age81, 0 for non-disadvantaged

DATA DICTIONARY--cont.

Name	Type	Length	File	Origin	Description
DISXAG82	NUM	2	VOUCH/ELIG	S-21	Disadvantaged* age82, 0 for non-disadvantaged
DISXAG83	NUM	2	VOUCH/ELIG	S-21	Disadvantaged* age83, 0 for non-disadvantaged
DISXAG84	NUM	2	VOUCH/ELIG	S-21	Disadvantaged* age84, 0 for non-disadvantaged
DSA	NUM	8	VOUCH/ELIG	S-18	Disadvantaged in SMSA that came to employment service in 1982
DVETS	NUM	8	VOUCH/ELIG	S-7	Disadvantaged veteran=1
DVT	NUM	8	VOUCH/ELIG	S-18	Disadvantaged veteran=1
DYTH	NUM	8	VOUCH/ELIG	S-18	Disadvantaged youth=1
DYTH1824	NUM	8	VOUCH/ELIG	S-7	Disadvantaged youth between the ages of 18 to 24=1
ELIG	NUM	2	VOUCH/ELIG	S-7	Eligible for TJTC=1
EMPOWN1	NUM	2	VOUCH	S-12	The following 25 variables (EMPOWN1-EMPOWN25) contain the ownership code of the employer (MA.351 attached document) with the most wages in this order: EMPOWN1 = employer with most wages EMPOWN25 = employer with least wages If the person had only four Employers, then EMPOWN5 - EMPOWN25 will be 0.
EMPOWN2	NUM	2	VOUCH	S-12	
EMPOWN3	NUM	2	VOUCH	S-12	
EMPOWN4	NUM	2	VOUCH	S-12	
EMPOWN5	NUM	2	VOUCH	S-12	
EMPOWN6	NUM	2	VOUCH	S-12	
EMPOWN7	NUM	2	VOUCH	S-12	
EMPOWN8	NUM	2	VOUCH	S-12	
EMPOWN9	NUM	2	VOUCH	S-12	
EMPOWN10	NUM	2	VOUCH	S-12	
EMPOWN11	NUM	2	VOUCH	S-12	
EMPOWN12	NUM	2	VOUCH	S-12	
EMPOWN13	NUM	2	VOUCH	S-12	
EMPOWN14	NUM	2	VOUCH	S-12	
EMPOWN15	NUM	2	VOUCH	S-12	
EMPOWN16	NUM	2	VOUCH	S-12	
EMPOWN17	NUM	2	VOUCH	S-12	
EMPOWN18	NUM	2	VOUCH	S-12	
EMPOWN19	NUM	2	VOUCH	S-12	
EMPOWN20	NUM	2	VOUCH	S-12	
EMPOWN21	NUM	2	VOUCH	S-12	
EMPOWN22	NUM	2	VOUCH	S-12	
EMPOWN23	NUM	2	VOUCH	S-12	
EMPOWN24	NUM	2	VOUCH	S-12	

DATA DICTIONARY--cont.

Name	Type	Length	File	Origin	Description
EMPOWN25	NUM	2	VOUCH	S-12	
EMPQTR1	NUM	2	VOUCH	S-22	The following 25 variables contain the total number of quarters a person was employed for each employer (Employer1-Employer25). Employer1 = Employer with most wages Employer25 = Employer with least wages
EMPQTR2	NUM	2	VOUCH	S-22	
EMPQTR3	NUM	2	VOUCH	S-22	
EMPQTR4	NUM	2	VOUCH	S-22	
EMPQTR5	NUM	2	VOUCH	S-22	
EMPQTR6	NUM	2	VOUCH	S-22	
EMPQTR7	NUM	2	VOUCH	S-22	
EMPQTR8	NUM	2	VOUCH	S-22	
EMPQTR9	NUM	2	VOUCH	S-22	
EMPQTR10	NUM	2	VOUCH	S-22	
EMPQTR11	NUM	2	VOUCH	S-22	
EMPQTR12	NUM	2	VOUCH	S-22	
EMPQTR13	NUM	2	VOUCH	S-22	
EMPQTR14	NUM	2	VOUCH	S-22	
EMPQTR15	NUM	2	VOUCH	S-22	
EMPQTR16	NUM	2	VOUCH	S-22	
EMPQTR17	NUM	2	VOUCH	S-22	
EMPQTR18	NUM	2	VOUCH	S-22	
EMPQTR19	NUM	2	VOUCH	S-22	
EMPQTR20	NUM	2	VOUCH	S-22	
EMPQTR21	NUM	2	VOUCH	S-22	
EMPQTR22	NUM	2	VOUCH	S-22	
EMPQTR23	NUM	2	VOUCH	S-22	
EMPQTR24	NUM	2	VOUCH	S-22	
EMPQTR25	NUM	2	VOUCH	S-22	
EMPSER1	NUM	4	VOUCH	S-12	The following 25 variables contain the employer's identification number (serial). Employer1 = Employer with most wages Employer25 = Employer with least wages
EMPSER2	NUM	4	VOUCH	S-12	
EMPSER3	NUM	4	VOUCH	S-12	
EMPSER4	NUM	4	VOUCH	S-12	
EMPSER5	NUM	4	VOUCH	S-12	
EMPSER6	NUM	4	VOUCH	S-12	
EMPSER7	NUM	4	VOUCH	S-12	
EMPSER8	NUM	4	VOUCH	S-12	
EMPSER9	NUM	4	VOUCH	S-12	
EMPSER10	NUM	4	VOUCH	S-12	
EMPSER11	NUM	4	VOUCH	S-12	

DATA DICTIONARY--*cont*.

Name	Type	Length	File	Origin	Description
EMPSER12	NUM	4	VOUCH	S-12	
EMPSER13	NUM	4	VOUCH	S-12	
EMPSER14	NUM	4	VOUCH	S-12	
EMPSER15	NUM	4	VOUCH	S-12	
EMPSER16	NUM	4	VOUCH	S-12	
EMPSER17	NUM	4	VOUCH	S-12	
EMPSER18	NUM	4	VOUCH	S-12	
EMPSER19	NUM	4	VOUCH	S-12	
EMPSER20	NUM	4	VOUCH	S-12	
EMPSER21	NUM	4	VOUCH	S-12	
EMPSER22	NUM	4	VOUCH	S-12	
EMPSER23	NUM	4	VOUCH	S-12	
EMPSER24	NUM	4	VOUCH	S-12	
EMPSER25	NUM	4	VOUCH	S-12	
EMPSIC1	NUM	2	VOUCH	S-12	The following 25 variables contain the employer SIC code. EMPLOYER1 = Employer with most wages EMPLOYER25 = Employer with least least wages
EMPSIC2	NUM	2	VOUCH	S-12	
EMPSIC3	NUM	2	VOUCH	S-12	
EMPSIC4	NUM	2	VOUCH	S-12	
EMPSIC5	NUM	2	VOUCH	S-12	
EMPSIC6	NUM	2	VOUCH	S-12	
EMPSIC7	NUM	2	VOUCH	S-12	
EMPSIC8	NUM	2	VOUCH	S-12	
EMPSIC9	NUM	2	VOUCH	S-12	
EMPSIC10	NUM	2	VOUCH	S-12	
EMPSIC11	NUM	2	VOUCH	S-12	
EMPSIC12	NUM	2	VOUCH	S-12	
EMPSIC13	NUM	2	VOUCH	S-12	
EMPSIC14	NUM	2	VOUCH	S-12	
EMPSIC15	NUM	2	VOUCH	S-12	
EMPSIC16	NUM	2	VOUCH	S-12	
EMPSIC17	NUM	2	VOUCH	S-12	
EMPSIC18	NUM	2	VOUCH	S-12	
EMPSIC19	NUM	2	VOUCH	S-12	
EMPSIC20	NUM	2	VOUCH	S-12	
EMPSIC21	NUM	2	VOUCH	S-12	
EMPSIC22	NUM	2	VOUCH	S-12	
EMPSIC23	NUM	2	VOUCH	S-12	
EMPSIC24	NUM	2	VOUCH	S-12	
EMPSIC25	NUM	2	VOUCH	S-12	
EQTR	NUM	2	VOUCH/ELIG	S-12	QUARTER = starting with first quarter of calendar year 1980 (values = 1 to 20)
ESTCERT	NUM	8	VOUCH/ELIG	S-12	Estimated number of certified in SMSA
ESVOUCH	NUM	8	VOUCH/ELIG	S-12	Estimated number of vouchered in SMSA

DATA DICTIONARY--cont.

Name	Type	Length	File	Origin	Description
ETHN	CHAR	1	VOUCH/ELIG	F-7	(MA171, atttached document)
E1	CHAR	8	VOUCH/ELIG	S-10	Aggregate transaction codes from MA351 (See Cost Effectiveness Study)
E2	CHAR	8	VOUCH/ELIG	S-10	
E3	CHAR	8	VOUCH/ELIG	S-10	
E4	CHAR	8	VOUCH/ELIG	S-10	
E5	CHAR	8	VOUCH/ELIG	S-10	
E6	CHAR	8	VOUCH/ELIG	S-10	
E7	CHAR	8	VOUCH/ELIG	S-10	
E8	CHAR	8	VOUCH/ELIG	S-10	
E9	CHAR	8	VOUCH/ELIG	S-10	
E10	CHAR	8	VOUCH/ELIG	S-10	
E11	CHAR	8	VOUCH/ELIG	S-10	
E12	CHAR	8	VOUCH/ELIG	S-10	
E13	CHAR	8	VOUCH/ELIG	S-10	
E14	CHAR	8	VOUCH/ELIG	S-10	
FIRQTR1	NUM	2	VOUCH	S-10	The following 25 variables contain the first quarter started working EMPLOYER1 = Employer with most wages EMPLOYER25 = Employer with least wages
FIRQTR2	NUM	2	VOUCH	S-10	
FIRQTR3	NUM	2	VOUCH	S-10	
FIRQTR4	NUM	2	VOUCH	S-10	
FIRQTR5	NUM	2	VOUCH	S-10	
FIRQTR6	NUM	2	VOUCH	S-10	
FIRQTR7	NUM	2	VOUCH	S-10	
FIRQTR8	NUM	2	VOUCH	S-10	
FIRQTR9	NUM	2	VOUCH	S-10	
FIRQTR10	NUM	2	VOUCH	S-11	
FIRQTR11	NUM	2	VOUCH	S-11	
FIRQTR12	NUM	2	VOUCH	S-11	
FIRQTR13	NUM	2	VOUCH	S-11	
FIRQTR14	NUM	2	VOUCH	S-11	
FIRQTR15	NUM	2	VOUCH	S-11	
FIRQTR16	NUM	2	VOUCH	S-11	
FIRQTR17	NUM	2	VOUCH	S-11	
FIRQTR18	NUM	2	VOUCH	S-11	
FIRQTR19	NUM	2	VOUCH	S-11	
FIRQTR20	NUM	2	VOUCH	S-11	
FIRQTR21	NUM	2	VOUCH	S-11	

DATA DICTIONARY--cont.

Name	Type	Length	File	Origin	Description
FIRQTR22	NUM	2	VOUCH	S-11	
FIRQTR23	NUM	2	VOUCH	S-11	
FIRQTR24	NUM	2	VOUCH	S-11	
FIRQTR25	NUM	2	VOUCH	S-11	
FOOD	CHAR	1	VOUCH/ELIG	F-7	(MA.171, attached document)
HAN	NUM	8	VOUCH/ELIG	S-18	Number of handicapped that visited employment service in 1982 in SMSA
HAND	CHAR	1	VOUCH/ELIG	F-7	(MA.171, attached document)
HIGR	CHAR	2	VOUCH/ELIG	F-7	(MA.171, attached document)
INSAMP	NUM	8	VOUCH/ELIG	S-18	Whole SMSA in state=1
INSMSA	NUM	1	VOUCH/ELIG	S-18	Residence in SMSA=1
INVOUCH	NUM	2	VOUCH	S-7	Record from voucher certification file=1
KCERT	NUM	8	VOUCH/ELIG	S-18	Known certified=1
KVOUCH	NUM	8	VOUCH/ELIG	S-18	Known vouchered=1
LOFF	CHAR	4	VOUCH/ELIG	F-7	(MA.171, attached document)
LSTQTR1	NUM	2	VOUCH	F-7	The following 25 variables contain the last quarter worked for an employer. If still employed after last quarter of 1984 then LSTQTR = 20. EMPLOYER1 = Employer with most wages EMPLOYER25 = Employer with least wages
LSTQTR2	NUM	2	VOUCH	F-7	
LSTQTR3	NUM	2	VOUCH	F-7	
LSTQTR4	NUM	2	VOUCH	F-7	
LSTQTR5	NUM	2	VOUCH	F-7	
LSTQTR6	NUM	2	VOUCH	F-7	
LSTQTR7	NUM	2	VOUCH	F-7	
LSTQTR8	NUM	2	VOUCH	F-7	
LSTQTR9	NUM	2	VOUCH	F-7	
LSTQTR10	NUM	2	VOUCH	F-7	
LSTQTR11	NUM	2	VOUCH	F-7	
LSTQTR12	NUM	2	VOUCH	F-7	
LSTQTR13	NUM	2	VOUCH	F-7	
LSTQTR14	NUM	2	VOUCH	F-7	
LSTQTR15	NUM	2	VOUCH	F-7	
LSTQTR16	NUM	2	VOUCH	F-7	
LSTQTR17	NUM	2	VOUCH	F-7	
LSTQTR18	NUM	2	VOUCH	F-7	
LSTQTR19	NUM	2	VOUCH	F-7	
LSTQTR20	NUM	2	VOUCH	F-7	
LSTQTR21	NUM	2	VOUCH	F-7	

DATA DICTIONARY--cont.

Name	Type	Length	File	Origin	Description
LSTQTR22	NUM	2	VOUCH	F-7	
LSTQTR23	NUM	2	VOUCH	F-7	
LSTQTR24	NUM	2	VOUCH	F-7	
LSTQTR25	NUM	2	VOUCH	F-7	
LTRADATE	CHAR	6	VOUCH/ELIG	F-7	(MA.171, attached document)
LTWAGE80	NUM	4	VOUCH/ELIG	S-11	Natural logarithm of total wages in 1980
LTWAGE81	NUM	4	VOUCH/ELIG	S-11	Natural logarithm of total wages in 1981
LTWAGE82	NUM	4	VOUCH/ELIG	S-11	Natural logarithm of total wages in 1982
LTWAGE83	NUM	4	VOUCH/ELIG	S-11	Natural logarithm of total wages in 1983
LTWAGE84	NUM	4	VOUCH/ELIG	S-11	Natural logarithm of total wages in 1984
LVEMP1	NUM	2	VOUCH/ELIG	S-11	This variable is a check on whether the person left the employers from the previous quarter
LVEMP2	NUM	2	VOUCH/ELIG	S-11	
LVEMP3	NUM	2	VOUCH/ELIG	S-11	
LVEMP4	NUM	2	VOUCH/ELIG	S-11	
LVEMP5	NUM	2	VOUCH/ELIG	S-11	
LVEMP6	NUM	2	VOUCH/ELIG	S-11	
LVEMP7	NUM	2	VOUCH/ELIG	S-11	
LVEMP8	NUM	2	VOUCH/ELIG	S-11	
LVEMP9	NUM	2	VOUCH/ELIG	S-11	
LVEMP10	NUM	2	VOUCH/ELIG	S-11	
LVEMP11	NUM	2	VOUCH/ELIG	S-11	
LVEMP12	NUM	2	VOUCH/ELIG	S-11	
LVEMP13	NUM	2	VOUCH/ELIG	S-11	
LVEMP14	NUM	2	VOUCH/ELIG	S-11	
LVEMP15	NUM	2	VOUCH/ELIG	S-11	
LVEMP16	NUM	2	VOUCH/ELIG	S-11	
LVEMP17	NUM	2	VOUCH/ELIG	S-11	
LVEMP18	NUM	2	VOUCH/ELIG	S-11	
LVEMP19	NUM	2	VOUCH/ELIG	S-11	
MANEMP80	NUM	8	VOUCH/ELIG	S-18	Manufacturing employers in SMSA
MIGR	CHAR	1	VOUCH/ELIG	F-7	(MA.171, attached document)
NAME	CHAR	12	VOUCH	F-6	Name of applicant
NVETS	NUM	8	VOUCH/ELIG	S-17	Non-disadvantaged veterans in SMSA
NVT	NUM	8	VOUCH/ELIG	S-18	Non-disadvantaged veterans in SMSA

DATA DICTIONARY--cont.

Name	Type	Length	File	Origin	Description
NYTH	NUM	8	VOUCH/ELIG	S-18	Non disadvantaged youth in SMSA
NYTH1824	NUM	8	VOUCH/ELIG	S-7	Non disadvantaged youth, 18-24 years old in SMSA
NYTH2529	NUM	8	VOUCH	S-7	Non disadvantaged youth, 25-29 years old in SMSA
OCC	CHAR	3	VOUCH/ELIG	F-7	(MA.171 attached document)
OLDVETS	NUM	8	VOUCH/ELIG	S-7	Veterans older than 35 years old in SMSA
OVT	NUM	8	VOUCH/ELIG	S-7	Veterans older than 35 years old in SMSA
OWNH1	NUM	2	VOUCH/ELIG	S-11	OWNER (MA.351 attached document)
OWNH2	NUM	2	VOUCH/ELIG	S-11	code of the highest wage employer
OWNH3	NUM	2	VOUCH/ELIG	S-11	in each quarter
OWNH4	NUM	2	VOUCH/ELIG	S-11	(QUARTER1 = fourth quarter of 1979)
OWNH5	NUM	2	VOUCH/ELIG	S-11	(QUARTER10 = third quarter of 1984)
OWNH6	NUM	2	VOUCH/ELIG	S-11	
OWNH7	NUM	2	VOUCH/ELIG	S-11	
OWNH8	NUM	2	VOUCH/ELIG	S-11	
OWNH9	NUM	2	VOUCH/ELIG	S-11	
OWNH10	NUM	2	VOUCH/ELIG	S-11	
OWNH11	NUM	2	VOUCH/ELIG	S-11	
OWNH12	NUM	2	VOUCH/ELIG	S-11	
OWNH13	NUM	2	VOUCH/ELIG	S-11	
OWNH14	NUM	2	VOUCH/ELIG	S-11	
OWNH15	NUM	2	VOUCH/ELIG	S-11	
OWNH16	NUM	2	VOUCH/ELIG	S-11	
OWNH17	NUM	2	VOUCH/ELIG	S-11	
OWNH18	NUM	2	VOUCH/ELIG	S-11	
OWNH19	NUM	2	VOUCH/ELIG	S-11	
OWNH20	NUM	2	VOUCH/ELIG	S-11	
PARTIAL	NUM	8	VOUCH/ELIG	S-18	SMSA partially in state=1
PCT1824	NUM	8	VOUCH/ELIG	S-18	Percent of the population
PERSY80	NUM	8	VOUCH/ELIG	S-18	Total personal income (from 1980 city county case book) in SMSA
PRECLAI	CHAR	1	VOUCH/ELIG	F-7	(MA.171 attached doucment)
PREVDISA	CHAR	1	VOUCH/ELIG	F-7	(MA.171 attached doucment)
PREVFOOD	CHAR	1	VOUCH/ELIG	F-7	(MA.171 attached doucment)
PREVWELF	CHAR	1	VOUCH/ELIG	F-7	(MA.171 attached doucment)

DATA DICTIONARY--cont.

Name	Type	Length	File	Origin	Description
SEX	NUM	2	VOUCH/ELIG	F-7	Sex 1= male, 2 = female
SICH1	NUM	2	VOUCH/ELIG	F-7	SIC code for highest wage employer in each quarter QUARTER1 = (fourth quarter of year 1979) QUARTER20 = (third quarter of
SICH2	NUM	2	VOUCH/ELIG	F-7	
SICH3	NUM	2	VOUCH/ELIG	F-7	
SICH4	NUM	2	VOUCH/ELIG	F-7	
SICH5	NUM	2	VOUCH/ELIG	F-7	
SICH6	NUM	2	VOUCH/ELIG	F-7	
SICH7	NUM	2	VOUCH/ELIG	F-7	
SICH8	NUM	2	VOUCH/ELIG	F-7	
SICH9	NUM	2	VOUCH/ELIG	F-7	
SICH10	NUM	2	VOUCH/ELIG	F-7	
SICH11	NUM	2	VOUCH/ELIG	F-7	
SICH12	NUM	2	VOUCH/ELIG	F-7	
SICH13	NUM	2	VOUCH/ELIG	F-7	
SICH14	NUM	2	VOUCH/ELIG	F-7	
SICH15	NUM	2	VOUCH/ELIG	F-7	
SICH16	NUM	2	VOUCH/ELIG	F-7	
SICH17	NUM	2	VOUCH/ELIG	F-7	
SICH18	NUM	2	VOUCH/ELIG	F-7	
SICH19	NUM	2	VOUCH/ELIG	F-7	
SICH20	NUM	2	VOUCH/ELIG	F-7	
SMSA	NUM	4	VOUCH/ELIG	F-7	(MA.171 attached doucment)
SQAGE80	NUM	3	VOUCH/ELIG	S-12	Square of age '80'
SQAGE81	NUM	3	VOUCH/ELIG	S-12	Square of age '81'
SQAGE82	NUM	3	VOUCH/ELIG	S-12	Square of age '82'
SQAGE83	NUM	3	VOUCH/ELIG	S-12	Square of age '83'
SQAGE84	NUM	3	VOUCH/ELIG	S-12	Square of age '84'
SRVEMP80	NUM	8	VOUCH/ELIG	S-18	Tot employment in service in 1980 in SMSA
SSI80	NUM	8	VOUCH	S-18	Supplemental security recipients in 1980 in SMSA
SSN	NUM	5	ELIG	F-7	Social security number
STATECOD	CHAR	2	VOUCH/ELIG	F-7	(MA.171 attached doucment)
ST1	NUM	8	VOUCH/ELIG	S-18	States in SMSA
ST2	NUM	8	VOUCH/ELIG	S-18	States in SMSA
ST3	NUM	8	VOUCH/ELIG	S-18	States in SMSA
TEMP80	NUM	8	VOUCH/ELIG	S-18	Total employment in 1980 in SMSA

DATA DICTIONARY--cont.

Name	Type	Length	File	Origin	Description
TOT	NUM	8	VOUCH/ELIG	S-18	Total number visited employment service in SMSA
TOTEMP	NUM	2	VOUCH	S-23	Total employers
TPOP80	NUM	8	VOUCH/ELIG	S-18	Total population in SMSA
TRANSFR80	NUM	8	VOUCH/ELIG	S-18	Transfer, payment in SMSA
TWAGE1	NUM	4	VOUCH/ELIG	F-13	Total wages in quarter 1 (QUARTER1 = fourth quarter 1979) (QUARTER20 = third quarter 1980)
TWAGE2	NUM	4	VOUCH/ELIG	F-13	
TWAGE3	NUM	4	VOUCH/ELIG	F-13	
TWAGE4	NUM	4	VOUCH/ELIG	F-13	
TWAGE5	NUM	4	VOUCH/ELIG	F-13	
TWAGE6	NUM	4	VOUCH/ELIG	F-13	
TWAGE7	NUM	4	VOUCH/ELIG	F-13	
TWAGE8	NUM	4	VOUCH/ELIG	F-13	
TWAGE9	NUM	4	VOUCH/ELIG	F-13	
TWAGE10	NUM	4	VOUCH/ELIG	F-13	
TWAGE11	NUM	4	VOUCH/ELIG	F-13	
TWAGE12	NUM	4	VOUCH/ELIG	F-13	
TWAGE13	NUM	4	VOUCH/ELIG	F-13	
TWAGE14	NUM	4	VOUCH/ELIG	F-13	
TWAGE15	NUM	4	VOUCH/ELIG	F-13	
TWAGE16	NUM	4	VOUCH/ELIG	F-13	
TWAGE17	NUM	4	VOUCH/ELIG	F-13	
TWAGE18	NUM	4	VOUCH/ELIG	F-13	
TWAGE19	NUM	4	VOUCH/ELIG	F-13	
TWAGE20	NUM	4	VOUCH/ELIG	F-13	
TWAGE80	NUM	4	VOUCH/ELIG	S-23	Total wages in 1980
TWAGE81	NUM	4	VOUCH/ELIG	S-23	Total wages in 1981
TWAGE82	NUM	4	VOUCH/ELIG	S-23	Total wages in 1982
TWAGE83	NUM	4	VOUCH/ELIG	S-23	Total wages in 1983
TWAGE84	NUM	4	VOUCH/ELIG	S-23	Total wages in 1984
VET	CHAR	1	VOUCH/ELIG	F-7	(MA.171 attached document)
VOUCH	NUM	8	VOUCH/ELIG	S-18	Total vouchered in SMSA
VVETS80	NUM	8	VOUCH/ELIG	S-18	Vietnam veterans in SMSA
V1	CHAR	2	VOUCH	F-1	Site ID
V2	CHAR	6	VOUCH	F-1	Case number
V3	CHAR	1	VOUCH	F-1	Control number

DATA DICTIONARY--cont.

Name	Type	Length	File	Origin	Description
V4	CHAR	2	VOUCH	F-1	Social security number
V5	CHAR	6	VOUCH	F-1	Name of applicant
V6	CHAR	1	VOUCH	F-1	Birthdate
V7	CHAR	1	VOUCH	F-1	Sex
V8	CHAR	2	VOUCH	F-1	Race
V9	CHAR	3	VOUCH	F-1	Number in family
V10	CHAR	6	VOUCH	F-1	Family income
V11	CHAR	6	VOUCH	F-1	Veteran status
V12	CHAR	3	VOUCH	F-1	Target group
V13	CHAR	6	VOUCH	F-1	Voucher date
V14	CHAR	6	VOUCH	F-1	Certification status
V18	CHAR	6	VOUCH	F-1	Certification date
V19	CHAR	1	VOUCH	F-1	Employment start date
V20	CHAR	8	VOUCH	F-1	Starting wage - hourly
V22	CHAR	20	VOUCH	F-1	Name of firm
V23	CHAR	6	VOUCH	F-1	Job title
V24	NUM	8	VOUCH	F-1	SIC code
V25	CHAR	1	VOUCH	F-1	DOT code
WEL	NUM	8	VOUCH/ELIG	S-18	People on welfare who visited employment service in SMSA
WELF	CHAR	1	VOUCH/ELIG	F-7	(MA.171 attached document)
WORRY1	NUM	8	VOUCH	F-7	Voucher date not in FY 1982
WORRY2	NUM	8	VOUCH	F-7	Employer-initiated cert
WORRY3	NUM	8	VOUCH	F-7	Employer-initiated cert
WPOP80	NUM	8	VOUCH/ELIG	S-18	White population in 1980 in SMSA
YRBI	NUM	2	VOUCH/ELIG	F-7	(MA.171 attached document)
YTH1824	NUM	8	VOUCH	S-7	Eligible youth 18-24 years old in SMSA
YTH2529	NUM	8	VOUCH/ELIG	S-7	Eligible youth 25-29 years old in SMSA

APPLICANT MASTER RECORD

FIELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED ENTRY
SSNO	SOCIAL SECURITY NUMBER Nine digit number used as the primary control for processing data on an applicant.	1-9	9	Range: 000000001 to 999999998 (000000000 and 999999999 reserved for federal use)	Yes
AGEGRP	AGE GROUP Computer generated based on year of birth; used for reports.	10	1	B - 15 & Under D - 16-17 E - 18 F - 19 G - 20 H - 21 K - 22-24 L - 25-29 M - 30-34 N - 35-39 P - 40-44 R - 45-54 T - 55-64 V - 65-69 W - 70-74 X - 75 & Over	Yes
FED	FEDERAL USE	11	1	Reserved for Federal Use	No
DATE	TRANSACTION DATE A six digit date (last two digits of year, month and day) indicates the date of the earliest chronological activity of an applicant.	12-17	6	Range: YY - 70 thru 90 MM - 01 thru 12 DD - 01 thru 31	Yes
LOFF	LOCAL OFFICE NUMBER Four digit number code used to identify the local office providing service to applicant.	18-21	4	Range: 0000 thru 9997 (9998 and 9999 reserved for federal use)	Yes
CNTY	COUNTY CODE Identifies the county in which the applicant resides.	22-24	3	(See FIPS PUB 6-1, Counties and County Equivalents of the States of the United States.)	Yes
FED	FEDERAL USE	25	1	Reserved for federal use.	No

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APPLICANT MASTER RECORD

LD E	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED CHARACTERISTIC OR ENTRY
MSA	SMSA BASED ON COUNTY CODE Computer generated based on county code. Designates the Statistical Metropolitan Area of a county. (Table required.)	26-29	4	Zero filled when there is not an SMSA for a particular county. See FIPS PUB 8, Metropolitan Statistical Areas.	Yes
X	SEX A one digit numeric code denoting applicant's sex.	30	1	1 = Male 2 = Female	Yes

APPLICANT MASTER RECORD

IELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED ENTRY
ENT XENT	X-ENTRY Positive entry indicates applicant is not fully qualified to perform duties of occupational code assigned.	31	1	1-X-ENTRY	*
CC	PRIMARY OCCUPATIONAL CODE Maximum 9 digit numeric code indicating the primary occupational classification assigned to an applicant. Composed of a BASE (first 6 positions), and a SUFFIX (last 3 positions).	32-40	9	A nine position numeric field if xent negative, a six position numeric field if xent positive.	Yes, for all but partially registered
RBI YRBI A-30	YEAR OF BIRTH Last two digits of the year of the applicant's birth.	41-42	2		Yes
IGR	HIGHEST SCHOOL GRADE COMPLETED Two digit numeric reflecting the highest school grade an applicant completed.	43-44	2		
PREVWELF ✓	PREVIOUS WELFARE Positive entry indicates applicant was carried over to current FY as a Welfare participant.	45	1	1 = WIN, Mandatory 2 = WIN, Voluntary 3 = Other 5 = WIN, Unemployed Parent	
PREVFOOD	PREVIOUS FOOD Positive entry indicates applicant was carried over to current FY as a Food Stamp applicant.	46	1	1 = Registration Received (No Assessment Performed) 2 = Category I (Job Ready) 3 = Category II (Non-Job Ready) 4 = Category III (Assessed) 5 = Category III (Not Assessed)	

*When applicable

APPLICANT MASTER RECORD

FIELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED ENTRY
FED	FEDERAL USE	47	1	Reserved for Federal Use	
ETHN	ETHNIC GROUP One digit numeric code indicating applicant's race.	48	1	1=White, Not Hispanic 2=Black, Not Hispanic 3=Hispanic 4=American Indian & Alaskan Native 5=Asian & Pacific Is. 6=INA	Yes
FED	FEDERAL USE	49	1	Reserved for Federal Use	No
VET ✓	VETERAN/OTHER ELIGIBLE Positive entry indicates applicant's veteran status.	50	1	BLANK = No 1 = Active Duty 8/04/64 to 5/08/75 2 = No Active Duty 8/04/64 to 5/08/75 but Vet. 3 = Not Veteran but entitled to Vet preference.	*
FED	FEDERAL USE	51-54	4	Reserved for Federal Use	No
PRECLAI	PREVIOUS CLAIMANT Positive entry indicates applicant was carried over to current FY as a UI Claimant.	55	1	1 = State 2 = Other 3 = Extended Benefits	
FED	FEDERAL USE	56	1	Reserved for Federal Use	No
WELF ✓	WELFARE	57	1	Blank = No 1 = WIN, Mandatory 2 = WIN, Voluntary 3 = Other Welfare 5 = WIN, unemployed (Parent) 7 = Title IV C Client	*
STATE-CODE	STATE CODE Indicates the state the applicant is registered in.	58-59	2	See FIPS PUB 5-1, States and Outlying Areas of the United States.	

*When applicable

APPLICANT MASTER RECORD

FIELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED ENTRY
SUMY ✓	SUMMER YOUTH Positive entry identifies applicant as being a summer youth.	60	1	1 = Summer Youth	
FED	FEDERAL USE	61	1	Reserved for Federal Use	No
FOOD	FOOD STAMP APPLICANT Positive entry indicates applicant has applied for food stamps.	62	1	Blank = No 1 = Registration Received (No Assessment Performed) 2 = Category I (Job Ready) 3 = Category II (Non-Job Ready) 4 = Category III (Assessed) 5 = Category III (Not Assessed)	*
WINP	WIN PROJECT NUMBER Positive entry indicates applicant is assigned a number.	63-66	4	All numeric	
FED	FEDERAL USE	67	1	Reserved for Federal Use	
MIGR	MIGRANT Postive entry identifies applicant is being a migrant or seasonal farm worker.	68	1	1 = Seasonal Farm Worker 2 = Migrant Farm Worker 3 = Migrant Food Processor	
FED	FEDERAL USE	69	1	Reserved for Federal Use	
CLAI	CLAIMANT Positive entry identifies applicant as being a UI Claimant.	70	1	1 = State 2 = Other 3 = Extended Benefits	

*When applicable.
**For use with Minimum App only.

APPLICANT MASTER RECORD

FIELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED ENTRY
FINAC	FIRST TIME INACTIVATION Positive entry indicates applicant inactivated for first time.	71	1	1 = Yes	
HAND ✓	HANDICAPPED/DISABLED Positive entry indicates applicant has a handicap.	72	1	Blank = No 1 = Handicapped (Not Disabled Veteran) 2 = Disabled Veteran 3 = Special Disabled Veteran	
LAST-TRAN-DATE	LAST TRANSACTION DATE Six digit date (YYMMDD) indicates the date of the last service given applicant.	73-78	6	Range: YY - 70 thru 90 MM - 01 thru 12 DD - 01 thru 31	Yes
PREVAPPR	PREVIOUS APPRAISAL Positive entry indicates an APPRAISAL service entered appraisal status during the previous fiscal year.	79	1	Blank = No 1 = Yes	

D E	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIREL CHARACTERISTI OR ENTRY
A	AREA CODE One position numeric code used to represent the subdivision of a state.	82	1	Range: 0 - 9	*
DST	DISTRICT CODE Two digit number code representing the subdivision of an Area.	83-84	2	Range: 00 thru 99	*
SMSA	STANDARD METROPOLITIAN STATISTICAL AREA Four digit numeric code to designate a local office in a SMS Area.	85-88	4	Range: 0000 - 9999	*
AREAIND	AREA INDICATOR Positive entry indicates applicant has received services from more than one Area.	89	1	1 = Received services from more than one area.	
DISTIND	DISTRICT INDICATOR Positive entry indicates applicant has received services from more than one District.	90	1	1 = Yes	
SMSAIND	STANDARD METROPOLITIAN STATISTICAL AREA INDICATOR Positive entry indicates applicant has received services from more than one SMS Area.	91	1	1 = Yes	
MSTRS1	MASTER INDICATOR Positive entry indicates the complete master record is being processed (used in rpts).	92	1	1 = Complete Record	

APPLICANT MASTER RECORD

FIELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED ENTRY
OFFIND	OFFICE INDICATOR Positive entry indicates applicant has received service from more than one local office. (computer generated)	93	1	1 = Received service from more than one local office.	No
STAT	STATE USE	94-105	12	Reserved for state use.	No
INACIND	INACTIVE INDICATOR Positive entry indicates applicant is inactive. This field is not used if applicant received service from more than one local office.	106	1	1 = Inactive If OFFIND (position 93) = 1, this field will be blank.	No
CAPS	CONTINUOUS AUTOMATED PLACEMENT SURVEY	107	1	1 = Referral or Placement 2 = Referral or Placement deleted	No
FSCN	FOOD STAMP CERTIFICATION	108	1	1 thru 6 = Number of months FSCN.	*
PREVMIGR	PREVIOUS MIGR Positive entry indicates applicant as carried over to current FY as a MIGR enrollee.	109	1	1 = Seasonal Farm Worker 2 = Migrant Farm Worker 3 = Migrant Food Processor	No
PREVSAU	PREVIOUS SUPPORTIVE SERVICE Positive entry indicates applicant received SAU service.	110-111	2	01 = Home & Financial Management 02 = Housing Improvement 03 = Transportation to Services 04 = Emergency Intervention	No

*When applicable

APPLICANT MASTER RECORD

FIELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED CHARATERISTIC OR ENTRY
				CHILD CARE 11 = SAU Funded 12 = Title XX Funded 13 = Work Related/Title IV A 14 = No Cost 15 = Unknown **WIN SAU MEDICAL EXAMINATION** 21 = SAU Funded 22 = Title XIX Funded **REMEDIAL MEDICAL/DENTAL** 31 = SAU Funded 32 = Title XIX Funded 41 = Vocational Rehabilitation 51 = Homemaker Services **FAMILY PLANNING** 61 = SAU Funder or Title XIX Funded 71 = Counseling **OTHER SERVICES** 81 = State Use I 82 = State Use II 83 = Federal Use	
FED	FEDERAL USE	112	1	Reserved for Federal Use	

MASTER SERVICES FILE

FIELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED ENTRY
SSNO	SOCIAL SECURITY NUMBER Nine digit number used as the primary control for processing data on an applicant.	1-9	9	Range: 000000001 to 999999998 For NON-ES use 000000000. ⬆	Yes
AREA	AREA One position numeric code used to represent the subdivision of a State.	10	1	Range: 1 thru 9, zero filled if not used.	*
DIST	DISTRICT Two digit numeric code representing the subdivision of an Area.	11-12	2	Range: 01 thru 99, zero filled if not used.	*
LOSMSA	LOCAL OFFICE SMSA Four digit numeric code designating the Statistical Metropolitan Area of the Local Office. See FIPS PUB 8, Metropolitan Statistical Areas.	13-16	4	Zero filled when there is an SMSA for a particular local office.	Yes
LOFF	LOCAL OFFICE NO. Four digit numeric code identifying the local office providing the service.	17-20	4	Range; 0000 thru 9997	Yes
DATE	TRANSACTION DATE Six digit date (YYMMDD) indicating the date of service.	21-26	6	Range: YY - 70 thru 90 MM - 01 thru 12 DD - 01 thru 31	Yes

*When applicable, otherwise zero fill.

MASTER SERVICES FILE

FIELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED ENTRY
TCDE	TRANSACTION CODE Three digit numeric code used to identify the type of service.	27-29	3	See ESARS Transaction & Sequence codes, MA311.	Yes
NOES	NON EMPLOYMENT SERVICE OFFICE Positive entry indicates reporting office is Non-ES Office.	30	1	Codes: 0 = ES Agency 1 = Non-ES Agency 2 = CETA Agency 3 = ETA Grantees 4 = Vocational Rehab 5 = Vet Administration 6 = Welfare Office 7 = SSA District Office	*

OTHER THAN JOB REFERRALS AND PLACEMENT RECORDS (31-48)

FIELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED ENTRY
OCC	OCCUPATIONAL CODE Maximum 9 digit numeric code designating the primary occupational classification assigned to an applicant. Composed of a BASE (1st 6 positions) & a SUFFIX (last 3 positions). See DICTIONARY OF OCCUPATIONAL TITLES, Third Edition.	31-39	9	BASE = First six positions must be numeric. SUFX = All numeric (if SUFX should be blank it will be filled with 9's).	*
XENT	X-ENTRY Identifies applicants not fully qualified to perform the duties of occupational code assigned.	40	1	1 = X-Entry 0 = Not Applicable	*

en applicable, otherwise zero filled.

MASTER SERVICES FILE

FIELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED ENTRY
PPSERV	PREVIOUS PERIOD SERVICE A service indicator updated once a year during the end of year purge; used for reports. (Used only in records with TCDE 020. Transaction codes are defined in the documentation for Program MA311.)	41	1	1 = Applicant placed in job or enrolled in training during the previous year-to-date period. 2 = Applicant not placed or enrolled in training but was provided other service.	*
FED	FEDERAL USE	42-48	7	Reserved for future federal use.	*
JOB REFERRAL AND PLACEMENT RECORDS 31-48					
BASE-12	FIRST 2 POSITIONS OF THE OCC CODE OF THE JOB ORDER An occupational category.	31-32	2	Must be numeric.	*
SPCO	SPECIAL CLASS OF OPENING One digit numeric code indicating if placement or job referral is for a special class of opening.	33	1	A - Regular B - Domestic C - Apprenticeship D - CETA/Work Experience E - CET/OJT G - Other Youth H - State Use J - State Use L - TJTC Req P - TJTC Acpt. X - CWEP V - WIN OJT Y - WIN PSEA F, K, N, T, U } Federal Use	*
HPAY	HOURLY RATE OF PAY Indicates the hourly rate of pay of the job to which an applicant was referred or placed.	34-37	4	Range: $00.50 thru $25.00	

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MASTER SERVICES FILE

FIELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED CHARACTERISTIC OR ENTRY
JDMD	JOB DEVELOPMENT & MANDATORY OPENINGS One digit code indicating whether the job order to which an applicant was referred or placed was received as a result of a job development contact. (SEE Below)**	38	1	1 = Job Development 2 = Mandatory Opening 3 = Job Development & Mandatory Opening	*
SIC	STANDARD INDUSTRIAL CLASSIFICATION	39-40	2	Range: 2 digit numeric code.	*
AFRM	AFFIRMATIVE ACTION	41	1	1 = Yes 2 = No	
JONO	JOB ORDER NUMBER Unique 7 digit number identifying the Job Order to which an applicant was referred or placed.	42-48	7	Range: 0000001 - 9999998	*
OWNR	OWNERSHIP One digit to establish the identity of ownership.	49	1	1 = Federal Government 2 = State Government 3 = Local Government 4 = Internation or Foreign Government 5 = Private Sector	*
FED	FEDERAL USE	50	1	Reserved for future federal use.	*

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** Continued from JDMD MANDATORY OPENINGS
To identify an order received under Executive Order 11589, Mandatory Listing by Cont. & Fed. Agencies.

MASTER SERVICES FILE

FIELD NAME	DESCRIPTION	LOCATION	SIZE	CODE/RANGE	REQUIRED CHARACTERISTIC OR ENTRY
DURA	DURATION A one digit code to identify length and type of placement.	51	1	1 = Full Time, 1-3 Days 2 = Full Time, 4-150 Days 3 = Full Time, Over 150 Days 4 = Part Time, 1-3 Days 5 = Part Time, 4-150 Days 6 = Part Time, Over 150 Days	*
YDIS-EEMPIND	PREVIOUS ENTERED EMPLOYMENT Positive entry indicates an Entered Employment status during the previous fiscal year.	52	1	Blank = No 1 = Yes	*
RFRM	REFERRED FROM A one digit code to indicate source of job to which applicant is being referred.	53	1	1 = Job Order Form 2 = Job Bank Book 3 = Job Information Service 4 = Applicant Query 5 = Employer Query (Batch) 6 = Employer Query (Real Time) 7 = Application Form 8 - Job Development	*
TOTAL	TOTAL	54-56	3	Range: Job Dev. Contacts = 001 thru 009. Followup = 001 thru 009. SATB Test = 001 thru 003. Proficiency Test = 001 thru 004. All other transaction = 001	

* When applicable; otherwise zero filled.

ESARS TRANSACTION AND SEQUENCE CODES

CODE	ITEM
* 003	Delete Applicant from File
* 005	Change Social Security Number
* 006	Social Security Number to be changed to
* 009	Change Local Office Number Duplicate
* 010	Change Local Office Number
020	Active Applicant Beginning of Period (October 1)
030	Applicant Transferred to Local Office Specified in this Transaction
040	New Applicant
050	New Applicant Partial
070	Renewal B
075	Report Renewal Only
170	Delete of all WIN ACTIVITY
** 171	Change Non-WIN to WIN
172	Change WIN to Non-WIN
** 173	Change Non-Food to Food
174	Change Food to Non-Food
** 177	Change Non-MICR to MICR
178	Change MICR to Non-MICR
** 179	Change Non-Claimant to Claimant
180	Change Claimant to Non-Claimant
COUNSELING	
200	Counseling Interviews-Individuals
202	Group Counseling Sessions
TESTING	
210	GATB
211	Proficiency
212	SATB
213	NATB
214	BOLT
215	BEAG
216	USES Interest Index
219	Other
JOB SEARCH ACTIVITY	
221	E.S. Job Search Workshop
222	E.S. Job Finding Club
223	Food Stamp Job Search
REFERRALS	
242	Referred to Job over 150 days
252	Referred to Job 4-150 days
262	Referred to Job 3 days or less
REFERRED TO SUPPORTIVE SERVICES	
271	Referred to Supportive Service
280	Job Development Contacts
291	Tax Credit Eligibility Determination

*These transactions will be dropped from the system completing the monthly process.

**These transactions will also change positive characteristic to another positive characteristic.

ESARS TRANSACTION AND SEQUENCE CODES -- CONT.

TRAINING

301	Comprehensive Employment Training Act Inst.	
302	Job Corps	
303	Other	
371	Obtained Employment from E.S. Job Serach or Job Finding Club	ob. emp.
372	Obtained Employment Food Stamp Only	
373	Obtained Employment After Other E.S. Service	
380	Failed to Respond to Call-In	
390	Failed to Report - Negative Training Referral Result	
395	Employment Search - Applicant	
396	Employment Search Group - Applicant	
398	Carryover RCIP (To establish the Recipient Status)	
399	Carryover Potential Follow Through Contacts (FLTH)	
400	WIN Appraisal	

WIN RECIPIENT STATUS

401	Working Registrant (Volunteer)
402	Suspense to Employment
403	Employment Search - Recipient
404	Employment Search Group - Recipient
405	Institutional Training
406	Work Experience
407	Suspense to Training
408	Part Time Employment
409	Other WIN Non-Component Activity
410	Unassigned Recipients

ENTERED EMPLOYMENT

411	Placement - Part Time less than 30 days	WIN
412	Placement - Part Time 30 days or more	
413	Placement - Full Time less than 30 days	
414	Placement - Full Time 30 days or more	
415	Obtained Employment - Part Time less than 30 days	
416	Obtained Employment - Part Time 30 days or more	
417	Obtained Employment - Full Time less than 30 days	
418	Obtained Employment - Full Time 30 days or more	
420	Tax Credit	

CONTACTED

421	Employed - No Further Services
422	Employed - Further Services
423	Not Employed
424	No Contact
425	Intending De-Registration
426	Hearing Requested
429	No Contact within 90 Days

DE-REGISTRATION

431	Employment after Registration - OFF AFDC
432	Employed Volunteer - Not OFF AFDC
433	Applicant Not Eligible for AFDC
434	Exempt
435	Sanctioned
436	OFF AFDC - Other
500	[Local Office Contact]

ESARS TRANSACTION AND SEQUENCE CODES - - CONT.

JOB ORDER

750	Placement, Local, Individual, Over 150 Days
752	Placement, Clearance, Individual, Over 150 Days
754	Placement, Interstate, Individual, Over 150 Days
756	Placement, Interstate, Local, Individual, Over 150 Days
760	Placement, Local, Individual, 4-150 Days
762	Placement, Clearance, Individual, 4-150 Days
764	Placement, Interstate, Individual, 4-150 Days
766	Placement, Interstate, Local, Individual, 4-150 Days
770	Placement, Local, Individual, 3 Days or less
772	Placement, Clearance, Individual, 3 Days or less
774	Placement, Interstate, Individual, 3 Days or less
776	Placement, Interstate, Local, Individual, 3 Days or less

MISCELLANEOUS

996	Inactive Applicant Master Record

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